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SOME QUESTIONS CONCERNING THE TREATMENT OF UTERINE FIBROMYOMATA.*

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Of the many interesting and debatable points upon which considerable light has been thrown by comparatively recent work, I had chosen two for discussion. Finding, however, that the time allotted each paper was necessarily very short, I was obliged to omit the second question, which concerned the preservation of the cervix in hysterectomy for myoma.

I shall speak then on but one point and on that but briefly, for the time is limited.

The first question that presents itself, when we assume the responsibility of advising these patients is:

In what cases should the tumor be let alone, as far as operation is concerned?

In order to come quickly to the point I will eliminate at once those classes of cases about which there is practically no question.

1. Cases in which the tumor causes no symptoms. They are seen by the physician only rarely and then usually by accident.

2. Cases in which the tumor is small and is causing only slight symptoms (moderate menorrhagia or dysmenorrhœa) which are relieved by general tonic treatment with the addition of uterine astringents (ergotin, stypticin, hydrastis), and the symptoms do not return soon after the treatment has been discontinued.

3. Cases in which the patient is past 45 years of age and the tumor is stationary in size, not large enough to cause disturbing pressure symptoms, accompanied by only a moderate menorrhagia and without troublesome intermenstrual symptoms.

It will hardly be questioned that for these three classes the expectant plan is the preferable treatment.

*Read at the annual meeting, Jefferson City, May, 1906.

4. Cases presenting conditions that threaten life or cause persistent severe suffering. The necessity of operation in this class has long been generally recognized.

It is the cases which lie between these two extremes to which I wish to direct your attention. What is the best treatment for the patients who have no threatening symptoms? They come for advice and treatment and the question is what is best to do for them?

The tumor is of moderate size, perhaps as large as the fist or two or three times as large. The patient is fairly well nourished, probably somewhat anemic, but not seriously so. The menstrual flow is excessive but by the continuous administration of ergotin or typticin it can be held down to very moderate menorrhagia. The backache and pelvic pressure are very troublesome at the menstrual periods but between the periods the patient feels fairly well and is able to do her work and attend to her social duties. She feels dragged out a good part of the time and has backache and pelvic discomfort after extra exertion. The patient is semi-invalid—not sick enough to be called sick and not well enough to be called well.

She is between 30 and 40 years of age, and has been under treatment, including a general tonic regime with the addition of uterine astringents, long enough to make it plain that the condition described is the best that can be obtained short of operation.

What advice shall we give such a patient? Should the tumor be let alone or should it be removed? You have each had fibromyoma cases and, if your experience coincides with mine, you have found it difficult at times, with the information available, to decide certainly just what is really best for such a patient.

It is easy to say to the patient: "Wait. There is no special indication for operation just now, there may be no serious increase in the symptoms at any time, and it is possible that after the menopause the troublesome symptoms will largely disappear."

The points made in that advice are all literally true and the advice itself seems plausible. But when some complication or condition, that would have been prevented by early removal of the tumor, rapidly causes the death of our patient, or forces her to operation with quadrupled risk, we begin to doubt the wisdom of the waiting advice. This is not a picture of fancy. Nearly all the fibromyoma cases that were operated on the world over previous to the last two or three years, and the larger part of those that are operated on to-day, have passed through the process just mentioned.

The patient went to a physician who treated her expectantly, according to the established usage, and congratulated himself that she was getting along pretty well. And she was "getting along pretty

well"—"pretty well" toward a condition that greatly increased the risk of the operation, which was finally necessary.

I may speak plainly for I speak from experience. The cap fits and I put it on—I trust others will do the same.

In many cases the physician who long treated the patient loses the lesson of the case through no fault of his own. Some of these patients pass through many hands in the various stages of the tumor growth, for it extends through many years. Perhaps half a dozen physicians have, from the same case, been established in their conclusion that fibroid patients get along very well and rarely need operation, while only the last physician whom the patient consults has the true lesson of the case forced upon him in a way that cannot be misunderstood. In some cases the serious condition advances so rapidly or so insidiously that the patient dies without the consideration of operative measures, or is found in such condition that operation is no longer possible.

Some physicians find it hard to believe that uterine fibroids really cause death, except so rarely that the cases may be classed as curiosities. A practical experience without even a moderate number of advanced cases will quickly dispel this illusion, provided the physician watches the cases to their terminations. The fact that they do cause death is illustrated by the following cases.

Patient[1], unmarried, had fibroid causing abdominal enlargement. No special symptoms, so she wished to wait until cooler weather for the operation. Before the oncome of such weather as suited her, she was seized with a chill, followed by high temperature and rapid pulse, and died. Necropsy showed extensive necrobiotic changes.

Patient[2], aged 57, single, had a fibroid which gave her no special trouble for fifteen years. It then rapidly enlarged, peritonitis came on and the patient died. Necropsy showed a fibroid with sarcomatous change, and presenting extensive local involvement and distant visceral metastases.

One of the first fibroid cases that came under my notice ran the following course: Patient, aged 31, was brought into the hospital with general peritonitis. So weak no history could be obtained. Large mass in abdomen, extending two inches above umbilicus. Died in short time. At necropsy, one large fibroid and several smaller ones were found. In the large fibroid were two foci of suppuration causing peritonitis and death.

The list could be extended indefinitely from hospital records, and no doubt the personal experience of the physicians in this room would show several such cases.

On the other hand, in deciding what to do for these patients, it is easy to take the other short cut and advise all patients with palpable fibroids to be operated on—that is, it is easy for the physician. But

before advising operation in any case we must assure ourselves that the chance of death assumed is fully justified by the danger of delay in that particular case. Then if death comes in spite of every precaution, we know at least that it was not an unwarranted sacrifice. It is easy enough to advise operation but it is not so easy to restore life to the deceased—who, but for the operation, might have lived in comparative comfort to old age.

But what advice shall we give our patient? The symptoms at present are not such, in themselves, as to necessitate operation. They are not threatening speedy death neither are they causing great disability. If they continue as they are, the patient, by continuing under treatment, by lying down most of the menstrual days and by being careful at other times as to extra work and walking, may live a fairly comfortable life.

Many women, probably most women in ordinary circumstances, would prefer this state rather than seek complete health through a dangerous operation, evn though the operative mortality is small. And I am not going to condemn such a choice—in fact, granted the stationary character of the trouble, I would strongly advise such a course.

But have we any well-grounded assurance that the trouble will remain stationary? There lies the gist of the matter.

The patient comes to the physician to learn, not what she already knows, viz., that with the present symptoms she can get along in comparative comfort, but whether it is safe for her to go along in that way. She wants to know whether she had better have the tumor removed now, while she is in good condition and the risk accordingly small, or whether she had better wait and see if severe symptoms develop.

This brings us up squarely to the question of prognosis in this class of myoma cases.

It is interesting, and pertinent to the subject, to notice for a moment the method of development of surgical treatment in general and of abdomino-pelvic surgery in particular.

At first major surgery was invoked in only the most desperate cases, those that were passing to certain and speedy death. This was proper for, in the state of experience at that time, the operation itself meant death in many cases. It was a desperate remedy for a desperate condition, and occasionally attained success. As the technique was perfected, more of the desperate cases were rescued from death. As these fatal conditions for which operation was carried out, were studied in conjunction with the experience gained in the operative work, physicians began to anticipate the desperate and terminal conditions, and to operate when the patient was in a somewhat better con-

dition and with much better success. Then they began to look still further ahead and consider the possibilities of surgery in conditions that became inoperable many months before death. Thus was gradually worked the prognosis and required treatment for ovarian tumors, for uterine cancer and for other pelvic and abdominal disease that were found to prove invariably fatal within a few years. The necessity of early operation in these conditions that proved fatal in a comparatively short time, was soon established, and gained general acceptance long ago. The course of such diseases was quickly run. Within the short period of a few years, the physician saw the patient a well woman, then the disease beginning,then its full development and then the invariable death, this taking place so quickly that it was all under the one physician and within his recent recollection. The lesson was obvious; delay meant death.

That field conquered, surgical attention was directed to the question of early operation in those diseases which, though not invariably causing death, nevetheless frequently caused death and in another large proportion of the cases caused persistent suffering and invalidism. Then was worked out the advisability of operation in the quiescent period, before the onset of the threatening or terminal symptoms, in cases of persistent pyosalpinx, appendicitis, nephrolithiasis, cholelithiasis, and many other abdominal and pelvic conditions that run a comparatively rapid course. In the case of a patient with one of these diseases, the prognosis is not necessarily fatal. Many such patients, having persistent symptoms, have lived to old age. And yet when any one of these conditions is unmistakably present, and there are persistent symptoms from it, there is little question but the removal of the disease is the part of wisdom, not so much because the present symptoms are troublesome but because the symptoms indicate that the process is continuing active, it having been established, and generally accepted, that when any one of these diseases is persistently active, it is liable at any time to develop a condition that may cause the patient's death or make more hazardous the operation then necessary to save her from death or from chronic invalidism.

This is exactly the condition that is present in uterine fibromyoma with presistent symptoms, even though the symptoms are not for the present threatening or disabling. Yet this fact is not generally recognized, and there is good reason for its not being recognized. Physicians generally have the excellent habit of requiring proof before accepting a statement and the absolute proof as to the advisability of early operation in uterine fibromyoma has not been forthcoming. I say this with all due respect to the many excellent men who have expressed as many excellent variations of the opinion that early operation is advisable. Opinion is not proof. It usually precedes proof and stirs up and brings out proof. When the proof is produced,

however, it is sometimes found that the opinion which preceded it, "preceded" in the wrong direction. So I am not surprised that the profession waits to see the proof before accepting the statement that early operation should be the rule in these cases.

When we come to produce the proof we find that we haven't it—at least, if any one has it I have not seen it and I have spent a good deal of time looking for it in the last few years.

Facts are gradually being accumulated, and many bearing on various phases of the subject have already been presented to the profession, but the actual life-history of fibromyoma patients, of the class under consideration, has not been followed up and completely recorded in a sufficient number of cases to enable us to present positive proof as to what proportion of them die of the disease, what proportion suffer chronic invalidism, and what proportion experience no serious trouble.

The finding of fatal complications in a large proportion of the operated cases is not proof positive that the less severe cases should be subjected to operation, any more than the finding of perforation or abscess formation in a large proportion of the severe operated cases of appendicitis was proof positive that it was wise to subject the less severe cases to operation.

The principal question concerning these fatal complications is not what proportion of operated cases present them but what proportion of the mild cases progress to them.

I do not minimize the importance of the arduous work of determining accurately the number of these complications in operated cases. That is needed and is necessary to the determination of the proportion of serious results in all clinical fibroid cases.

But in our enthusiasm over the accomplishment of the first, we must not mistake it for the second. The proportion of operated cases presenting these fatal and disabling complications is now a matter of record, and the record includes a sufficiently large number of cases to justify fairly definite conclusions on that point. The proportion of mild cases that progress to the serious condition is not a matter of record, in fact, has not been even approximately determined, and cannot be until the life history of a very large series of the various classes of fibromyoma cases, is available for analysis.

This can be secured only by following the patients of each class through many years to the end. No doubt this matter has been taken up and will be taken up very generally and prosecuted till a sufficiently large series has been secured. I hope to accumulate some information on this point, at least for my own satisfaction, but it is uphill work. The patients move and are lost sight of. There is not the same mutual interest that attaches in operated cases and the patients are followed with greater difficulty and fewer returns. But this life history of the

less severe cases can be obtained in time and must be obtained, for it is necessary to complete knowledge of the subject.

Some of us have had an experience in these cases sufficiently large to justify us in forming and expressing an opinion to assist in the guidance of others. And though we may believe that our views are sound and founded on facts as far as they go, and will become more generally recognized as more and fore facts are established, yet we must not forget that the complete proofs, in black and white, are lacking at the present time.

Why is it so hard to establish certainly the exact proportion of fibromyoma cases that turn out badly? Because of the slow progress and long duration of the disease. In persistent salpingitis or appendicitis the cases that are going to turn out badly usually do so within one or two or three years, so by watching a large series of cases for that length of time it could be determined what proportion resulted seriously, and could be established by statistical proof just what proportion of cases could be saved from death or disablement by early operation. The fibromyoma cases, on the other hand, present a much more difficult problem. Here the absence of threatening symptoms for five or ten or twenty years, gives no assurance that serious trouble may not develop at any time. Case histories are numerous showing that patients have waited patiently and hopefully for ten or twenty years, with fibroids that produced no serious symptoms, only to come at last to the operating table because of some rapidly developing trouble dependent on the tumor. Consequently each patient must be followed to the end before we can say that there was no occasion for removal of the growth in that case.

But we cannot wait until all these things are determined before giving our patient advice; she might die of old age, if not of the tumor.

What are the facts so far established, that will help to guide us in advising this patient?

1. Some fibromyomata never give any serious trouble. I refer of course to clinical fibromyomata, i. e., tumors that were recognized during life or that could have been recognized had the patient come for examination. The small latent fibroid nodules, found in such a large proportion of sectioned uteri removed post mortem, are not now under consideration.

A patient may go through a long, useful and happy life, with a palpable fibroid, and experience no particular difficulty from the growth. This fact has been demonstrated over and over again in clinical work and in autopsies on patients who have died of independent diseases or of senility.

What proportion of cases run this course we do not know, either exactly or approximately. We know only that "some"—a considerable

number—have done so. This fact, however, is sufficient to overthrow the contention that "all palpable fibroids should be subjected to operation." There is a mortality due to the operation. To be sure the mortality is small, under proper technique and surroundings, and will become much smaller as the cases are subjected to operation earlier and therefore under safer conditions. But even in the most favorable cases there is, and will continue to be, an occasional death from the operation. And before advising operation in any case we should, as already remarked, assure ourselves that the chance of death assumed is fully justified by the danger of delay in that particular case.

2. In a certain proportion of cases there have developed fatal complications, which were due to the tumor or would have been prevented by its early removal.

Just what proportion of all clinical fibroid cases have developed, or will develop, these fatal complications we do not know, and cannot know in the present state of knowledge.

Just what proportion of operated fibroid cases have developed these complications has been determined in several series of cases, through the careful observation and painstaking labor of the physicians under whose care the patients came. No one can investigate this subject without coming to feel under personal obligation to the men who have taken the time and the labor to prosecute this work in a reliable way and to place the results before the profession. To Dr. Chas. P. Noble, of Philadelphia, belongs the credit of stirring up the profession on this subject, by presenting and keeping before it incontestible evidence, from his own work and the work of others, of the great frequency of fatal and disabling complications, due directly to thes tumors or associated with with.

In a series of 1,188 cases collected by Noble[3] (Noble 278, Scharlieb 100, McDonald 280, Martin 205, Cullingworth 100, Frederick 125, Hunner 100), there were found the striking number of 795 degenerations.

However, in looking over this list it is seen that many of the complications are not serious and, of even the serious ones, some are in no way dependent on the presence of the tumor.

In order to determine approximately what probable fatalities, here noted, could have been prevented by early removal of the growth, I prepared the tabular analysis given below.

The number of tubal and ovarian complications prevented by early removal of the growth depends, of course, on the number of tubes and ovaries removed. I made the estimate on the basis of two-thirds of tubes removed (hysterectomy in two-thirds of the cases and myomectomy in one-third) and half of ovaries removed (both ovaries removed in one-third of the cases and one ovary removed in another third). Of course, if found advisable to limit myomectomy to a

smaller proportion of the cases, more tubes would be removed and hence more tubal complications prevented. As to whether myomectomy is preferable to hysterectomy in a considerable proportion of the cases, that is a question on which there is much of interest to be said on each side and it can not be taken up here. However, there is no question but that, as early operation is more widely adopted, a larger proportion of the cases will be found suitable for myomectomy. In fact, the more frequent saving of the uterus is one of the benefits that will follow the adoption of early operation in these cases. The chance of later enlargement of small "latent" fibroid nodules, to the dignity of clinical fibroids is not so great as to deter us in preserving the uterus in suitable cases. It happens occasionally. Some months ago I was obliged to remove the uterus for extensive multi-nodular, intra-ligamentary fibroid development in a patient, aged 31, who eighteen months previously had undergone myomectomy in a New York hospital. In this particular case I attribute the rapid growth of the fibroids partly to the chronic congestion of a severe pelvic inflammation, resulting in pyosalpinx, the infection evidently having been contracted some time after the first operation. Ordinarily, according to the reported cases that have so far come to my notice, this development of other tumors after operation has not taken place often enough to constitute a serious objection to myomectomy in suitable cases. Again, in certain cases, the preservation of the uterus is well worth the risk of a second or even a third operation.

In estimating the number of serious tubal and ovarian complications prevented by early removal of the tumor, the bare proportion of tubes and ovaries removed does not fully represent the proportion of complications prevented, for only apparently normal adnexa are left. Those tubes and ovaries which would show serious trouble later, are likely to show some abnormality at the time of operation and hence would be removed. The table includes 1,815 cases, consisting of nine series of consecutive cases (Noble 1188, as mentioned above, Watt-Keen[4] (from Hofmeier's clinic) 417, Webster[5] 210). The question is: What probable fatalities, from degeneration of the tumor or from local complications, would have been prevented by early removal of the tumor? and only the complications bearing on this question are mentioned. In the first column is given the number found of the particular degeneration mentioned. In the second column is given the number of these that would almost certainly have been prevented by the early removal of the tumor, and in the third column is given the probable fatalities from the latter.

Necrosis of tumor	86	86	80
Suppurating tumor	10	10	8
Oedematous tumor	11	11	4
Myxomatous degeneration of tumor	56	56	40

Cystic degeneration of tumor	53	53	30
Calcareous degeneration of tumor	36	36	6
Serious intra-lig. development of tumor	44	44	15
Malignant disease of tumor or corpus uteri	65	65	65
Large hydronephrosis from tumor pressure	6	6	3
Twisted pedacle of tumor	33	3	2
Pyosalpinx	37	24	15
Salpingitis	127	84	12
Abscess of ovary	10	5	3
Carcinoma of ovary	3	2	2
Ovarian cyst, including dermoids	118	75	60

This shows probable fatalities numbering 345, or 19 per cent, simply from the tumor degenerations and local complications mentioned, exclusive of other fatal and disabling effects of the fibroid. This I consider an ultra-conservative estimate. I believe that, were these cases traced to the end without operation, the number of deaths simply from the conditions specified would considerably exceed the number here estimated.

In a recent report by winter[6] of 753 operated cases, malignant disease of the tumor or corpus uteri was found in 39 cases and total necrosis of the tumor in 17 cases. Thus, counting only two of the serious conditions mentioned in the table, it is found that they include nearly 8 per cent of his cases.

3. In a certain proportion of cases serious visceral degenerations appear in distant organs. The frequent association of heart disturbance with advanced uterine fibroid, has attracted much attention. The proportion showing heart disturbance is striking. Winter had 266 consecutive cases examined for heart diseases and found heart disturbance in 38 per cent. In five series carefully examined (Winter[7] 266, Strassmann and Lehmann[8] 71, Boldt[9] 79, Fleck[10] 325, Webster[5] 210), the number showing heart disturbance varied from 25 to 47 per cent., averaging 38 per cent. for the whole 951 cases Of course, a certain number of these heart disturbances would have been found in any series of patients. But, making due allowance for these, the number is too marked and constant to be a mere coincidence. The exact connection between the two has not been worked out. But whether the heart disturbances are due principally to the chronic anemia from hemorrhage or to the direct action of some toxin manufactured in the fibroid or constitute simply an associated product of the same conditions that produced the fibroid,—whatever the cause—the fact remains that they are there and must be reckoned with. Some of these are minor functional disturbances but on the other hand many are of serious import. Even Deaver[11], who is an advocate of late operation only, recently stated, "The great frequency of myocarditis and arteriosclerosis apparently directly caused by the

fibroid growth, is well known, and to sudden heart failure, pulmonary embolism or to apoplexy may no doubt be attributed many a post-operative death."

That this has actually been the case is shown by Baldy[12] from the records of the Gynecian Hospital. In the series of 3,413 operations, sudden post-operative death due to circulatory disturbance occurred 16 times. Thirteen of these sudden deaths occurred in the 366 fibromyoma cases, while the 3,047 other operative cases furnished only 3 such deaths. It occurred 36 times as frequently in the fibroid cases as in the general run of operative cases.

Other visceral degenerations from the chronic anemia, from pressure on the ureters and from other effects of the fibroid, produce fatalities due really to the firoid, but attributed to other cases.

Let us now look at some of the facts that are put forward *against* the idea that myoma causes death in any considerable proportion of the cases.

1. General mortuary records show only an insignificant death rate from this disease.

The U. S. Census [13] (1900) shows 657 deaths from fibroid tumor of the uterus in a population of about 37,000,000 females.

The Great Britain Census (1901) shows 339 deaths from fibroid tumor of the uterus in a population of about 17,000,000 females. There is a striking agreement here, both indicating that the death rate is about 1 in 50,000—a very soothing proposition to one called to treat a patient so afflicted. According to this, I suppose the patient has about as much chance of being killed by lightning as by her fibroid. But was this all the deaths from fibroid disease in that time? Do not the numbers here given represent simply the cases in which nothing else could be found to account for the death. How about the fibromyoma patients that died of kidney disease, of heart disease, of anemia, of "uterine hemorrhage", of uterine "cancer" (cancer of endometrium associated with fibroid or a sloughing fibroid mistaken for cancer), of salpingitis, of peritonitis, and of other conditions due directly to the fibroid or that would have been prevented by its early removal? Until we count the deaths due to these complications, the census figures amount to very little as showing the deaths due to fibroid disease. They show simply that, in the countries mentioned, few patients die of *uncomplicated* fibroids.

2. Hospital records of fibroid cases show few deaths among them. In St. Bartholomew's Hospitol[14], among 547 uterine fibromyoma cases there were but 29 deaths, and 28 of these followed operation. Now we are getting it straight from the shoulder. Here is a series of 547 fibroid cases, only one of which died of the fibroid while 28 died of the operation—accurate records, careful diagnosis, thoroughly reliable report. What shall I say to that? Well on first

thought I would say, "Shut up shop and turn the cases over to Nature, which is beating the surgeons 28 to 1." But before deciding on that course I would seek some additional information. How many of the 28 patients who died following operation, would have died without operation? How many of the 547 patients with fibroid tumors were saved from death by operation? What was the after history of each one of the non-operated cases? When this additional information is obtained, then we will have some idea as to how many deaths from fibroid would have occurred in this series of 547 cases.

Practically the same deficiencies appear in all hospital series of fibromyoma cases, and in a measure necessarily so, for how can the hospital records show the number of non-operated cases that come to death or operation after they leave the hospital?

3. Large series of cases from private records show only a small proportion of the patients in really serious condition. There are many such reports. A recent one is that of Dr. E. J. Ill,[15] of Buffalo, in which he reports all fibroid cases seen by him in the preceding three years. There were 300 cases. He operated on 53 and advised operation in 6 others, making 59 cases in which operation was required according to the indications that he followed. So we have here a good large series of fibromyoma cases, carefully observed and reported, and in only about 18 per cent was "life endangered" or "health so impaired that life is a burden." Eighteen per cent of serious terminations is not a small per cent for what some are pleased to style a "harmless" growth. But is that the total number of serious terminations in the whole 300 cases? How many of the patients who were in good conditions when he last saw them will progress to the same stage of the disease in which he saw the 18 per cent?

Fibromyoma of the uterus is a very slow growing tumor. It may gradually progress over a period of twenty years or more. Taking off the first five years, as the tumor may not come under observation then, we have fifteen years of the growth's progress in which the patient is likely to consult a physician. If in a mixed series observed during a period of three years, 18 per cent are found to have reached the serious condition mentioned, what per cent will have reached the same condition when the same series has been observed six years, nine years, twelve years, fifteen years? Of course, it would not be true to assume that because observation of the series for three years showed serious terminations in 18 per cent, observation of the same series for fifteen years would show serious terminations in 90 per cent, but it would be much nearer the truth than the assumption of 18 per cent as the total serious terminations in the 300 cases.

Physicians see but a small number of their fibromyoma cases to the end. The patient in the earlier stages of the disease drifts from one physician to another, helping to swell the list of patients "not

requiring operation" for two or three or more physicians. Later there develop threatening symptoms demanding operation, which is carried out. In the records of the last physician only does the case appear as one "requiring operation." So from this one case there is clear statistical proof that operation is required in only 33 per cent of fibroid cases.

In looking up the records of my fibromyoma cases in hospital, clinic, and private work, I find that 17½ per cent were subjected to operation. Operation was advised in a number of other cases, but just how many I cannot state as the recommendations were not always recorded. In about two-thirds of the total number of fibroid cases seen, there were, at the time no urgent or threatening symptoms. But I do not deceive myself with the idea that, because these patients were in fairly good condition when last seen, they should therefore be classed as fibroid cases that at no time required operation. They could not be properly so classed until traced to the end.

Even in the occasional case which is seen through all stages by one physician, the progress is so slow and the last stage is so far removed from the first, that the relation of cause and effect is in a measure overlooked. If the end came in two or three years, as in cancer, it would be impressive, but the first appearance of the tumor and the ultimate result being so far separated, the connection is somehow lost. The case seems an exceptional one, some new factor at work—the terminal condition can hardly be recognized as due to the harmless fibroid which the patient has carried so many years without particular trouble.

I mention these things because I believe that many are misled by them. The last contribution to this part of the subject that has come to my notice, is that by Thos. Wilson[16] of Birmingham, Eng. He assures us, on practically the same deceptive evidence, viz., the analysis of a series of cases seen for a short time, that of fibroids giving rise to symptoms, only 30 per cent require removal. The remaining 70 per cent require merely watching and minor palliative treatment.

As to what eventually becomes of this 70 per cent he furnishes no proof. However, in the recommendations for the care of them, after giving directions for the relief of various distressing symptoms, he states, "And, finally, operation should be recommended when bleeding gives rise to anemia and does not yield to ordinary treatment; when pain is severe and obstinate; when pressure symptoms, especially retention of urine, occur; when the tumor is rapidly increasing in size; and generally when there is evidence that the health of the patient is becoming impaired"—and he might have added, when the kidneys are damaged; when the cardio-vascular system is seriously affected; when the patient is in bad condition for operation; and when the opera-

tive mortality is necessarily high. I fail to appreciate the advantages of the enumerated conditions secured by waiting.

I am anxious to get at the real significance of the facts presented on this subect. I am not interested in supporting any particular theory. I have fibromyoma cases to treat, however, and I want to know what is best for them, and do not intend to be misled in the matter, one way or another, by taking facts to mean something that they do not mean, if I can avoid it. I am as anxious as any one here to know all the facts against early operation as well as all the facts for it. I would gladly welcome any information establishing the safety of waiting in these cases, for no one feels more than I do, the responsibility of advising a patient in comparatively good health to undergo the dangers of a serious operation.

As to "conclusions," the important thing just now is *your* conclusion, the conclusion of each physician present. For, though such conclusion or opinion may not conclude the subject in a general way, it does conclude it for your patients; to them it is all important, for it means their weal or woe.

Any good that may come from these remarks will come not from the expression of my opinion but from your earnest consideration of the subject. I do not ask you to agree with me. I do not want you to agree with me. What I ask is that you form your own opinion after critical consideration of established facts, not hastily, not too much influenced by the opinions of others, but carefully and seriously, as one who is personally responsible for the welfare of the patient.

My own working rules in this matter, are as follows:

1. A patient who has a small fibroid that is causing no symptoms, requires no treatment for the fibroid. Such tumors are rarely seen. Occasionally one is discovered in the course of an examination for symptoms plainly due to other cause. In such a case I usually do not mention to the patient that she has a fibroid, unless she asks directly concerning it, though I take pains to state the fact and its bearing to the husband or other responsible relative. It seems to me that this is more conducive to the patient's happiness than the explanation to her that she has a growth, some writers to the contrary notwithstanding. To a patient, a "tumor" or "growth" is a gnawing entity. She does not appreciate how little this particular form of growth means, if it remains as it is. With all your explanations to the effect that she "need not worry" and that "it is nothing", there is the lurking knowledge that "it" is there and threatening. And though she apparently casts aside all thought of it, it comes to her in the quiet moments when her thoughts should be of more pleasant things.

If it is "nothing" why burden her with the unpleasant knowledge of it when all useful ends can be as well attained in another way. Such a case furnishes, I think, a well chosen occasion for practical

application of the sentiment, "Where ignorance is bliss, 'tis folly to be wise."

2. A patient has a tumor of moderate size (as large as a fist) causing only slightly troublesome symptoms, which may yield to general tonic treatment, with the addition of uterine astringents (ergotin, stypticin).

She is put on the treatment just mentioned for one to three months—long enough to satisfy me whether the symptoms will subside under this treatment. If so, the treatment is continued as necessary to control the symptoms. By "control" of the symptoms I do not mean just so the patient can manage to get along as a semi-invalid, but to such an extent that they are not noticeable to her, that she is practically a well woman.

If I find the symptoms persist after a satisfactory trial of this treatment, it means that they are due, largely, to the activity of the tumor, and not simply to accompanying pelvic congestion dependent principally on some minor inflammatory trouble or on constipation or on methods of work or on other cause independent of the tumor. The persistence of symptoms, after a satisfactory trial of measures to eliminate symptoms due to other causes, means that the tumor itself is already an active irritant in the pelvis. Not active in the sense that it is necessarily rapidly enlarging or degenerating, but active in the sense that it has not passed into the resting, non-active, clinically cured state, but is working the other way. It is active in the same sense that a persisting appendicitis is active in the quiescent periods between the acute attacks. The difference is that the activity of the fibroid is more insidious, less disturbing for the time being, slower, not published by acute exacerbations—but nevertheless, persistently progressive.

However, before recommending operation in a fibromyoma case because of persistent symptoms, I take pains to make certain that the persistence of the symptoms is due to the tumor, and not to some associated condition or conditions that can be relieved by less dangerous measures.

Having established beyond doubt that the tumor itself is already a continual irritant in the pelvis, I say to the patient:

"There is persistent trouble in spite of the treatment, and this trouble is due to the tumor. There is little chance of its getting better or of its remaining permanently stationary. The strong probability is that it will get progressively worse. And it may at any time get rapidly worse, and develop conditions that would increase many times the danger of the operation which would then be necessary to save your life, if it could be saved. I am satisfied that the danger of operation *now* is much less than the danger of delay."

3. In cases where the tumor is causing symptoms that plainly

cannot be corrected by other measures, I at once recommend operation, without wasting time with the other measures.

What about large tumors without symptoms? I am skeptical on the subject of large tumors without symptoms. They are certainly very scarce. I do not remember having seen any case of large fibromyoma in which careful inquiry did not show some evidence of disturbance from the growth before it had attained a large size—unless the following case, seen recently in consultation with Dr. C. O. C. Max, of St. Louis, could be classed as such.

The patient, a white woman, aged 30, unmarried, noticed in a casual way, about the middle of last February, that the lower abdomen seemed rather larger and firm. Subsequent developments indicate that the tumor must have been of considerable size at that time, probably reaching half way to the umbilicus. Careful inquiry elicited no noticeable evidence of disturbance at that time, not even bladder irritability. As the patient felt well she paid no particular attention to the slight fullness of the abdomen. At the middle of March the menstrual flow was not so free as usual and, for reasons best known to herself, she became frightened and went to a widwife, who March 21, introduced a sound into the uterus and assured the patient there was no pregnancy. For two days she worked and felt well. The second night, however, she had a chill followed by fever and intermittent pains in the abdomen and a bloody flow with clots. The trouble increased and the patient's condition became serious and she called in Dr. Max, who very properly proceeded to empty the infected and partly emptied uterus. But there was not much material to be removed. The fever and pains kept up and the patient's condition became still more serious. It was then that I was asked to see her in consultation. Though it had been only eight days since the onset of decided symptoms, the fibroid uterus was then as high as the umbilicus.

Thinking that possibly the acute infection was of such character that it would quickly subside, permitting a safer operation when the virulence was spent, we treated the case accordingly. But the fever continued high, the abdominal pains increased, the pulse became rapid and the patient, instead of getting better, went from bad to worse. So we were obliged to operate, April 14, in the presence of the acute infection. The specimen furnishes a particularly clear illustration of the danger of a slonging fibroid, so I brought it for your inspection. The necrotic fibroid has caused a perforation through the uterine wall into the peritoneal cavity.

This was one of those mild cases that "get along comfortably and present no justification for subjecting the patient to the risks of a serious operation." There were no threatening symptoms, in fact, there were no symptoms of any kind that the patient noticed, except

a slight fullness in the lower abdomen. And yet within four weeks the patient was in a most serious condition, and had to be operated on in that condition with the greatly increased risk.

There was a streptococcus infection, causing sloughing of the fibroid, and the large sloughing fibroid had caused perforation of the uterine wall, destroying an area as large as a silver dollar, as here shown. The portion of omentum which covered this opening is also shown. When the adhesions were partially separated, the bloody infected fluid from around the necrotic fibroid poured out into the peritoneal cavity. This gives an idea of the desperate character of the case. The operation was a total hysterectomy. The patient recovered. On account of the extensive infection, involving the peritoneal cavity, we drained both into the vagina and through the abdominal incision.

Returning to the general subect of advice to fibromyoma patients, the three working rules just given very readily indicate in most cases whether the tumor should be let alone or removed. I refer to the general run of cases—the common forms of myoma in patients under ordinary circumstances.

There are, of course, certain exceptional cases in which there must be taken into consideration special conditions—in the fibromyomatous uterus or in the age or physical condition of the patient or in her surrounding circumstances. For example, if the uterus is pregnant and the tumor is of such size and situation that it will probably not interfere with pregnancy and parturition. I would not interfere at that time. If the patient is in the menopause or safely through that period, I would feel justified in leaving some growths that I would not leave in a younger woman. Again, a patient may be in such circumstances that it is important that, for a time, she take no risk, not even a small one, unless absolutely forced into it by the most threatening conditions, as when the patient has small children wholly dependent on her for the time being. Again the distribution of the tumor tissue has, in certain cases, a considerable influence on the decision; for example, a patient presenting several good-sized nodules in the uterine wall can wait with more safety than where the same amount of fibromyomatous growth is collected in one or two large tumors. There are many such special conditions that must be taken into consideration. This is true to such an extent that, in a measure, each case requires particular consideration and decision. This is the reason why it is impossible to formulate rules applicable to all cases.

However, we necessarily, even in the exceptional cases, base our advice largely on some general guiding principles. And it behooves us to be certain that those general principles accord with the facts, (the real facts and not the supposed facts,) as far as the facts are known.

In closing, I wish to emphasize the following points:

1. A fibroid tumor of the uterus, which has reached a size to be appreciated clinically, is a much more serious affection than is generally supposed.

A considerable proportion of the patients develop fatal local conditions, another considerable proportion develop serious distant visceral degenerations, and a large proportion of the remainder (possibly most of them) finally pass into a condition of chronic suffering and invalidism.

2. The progress of the disease is so slow as to be deceptive, many cases taking fifteen to twenty years to reach full development—hence the serious results do not appear in the observation of a series of cases for a few years, a few years constituting but a fraction of the developmental period.

Yet the wide-spread teaching that serious conditions develop in only a very small proportion of the cases, is based largely on just limited observations, recorded and unrecorded. No large series of consecutive cases followed to the end without operation has shown a small mortality.

3. Uterine fibroid kills principally by inducing serious local and general complications, that go down in the mortuary records as the cause of death—hence mortuary records give no indication of the ravages of the disease. It kills secretly and indirectly, but none the less surely.

4. The proportion of the various classes that (a) go on to a fatal termination or (b) become chronic sufferers and invalids or (c) develop no serious symptoms, can be exactly determined only by securing accurate records of a large series of cases, comprising all classes, from the beginning of the trouble to the end.

5. Enough is already known to show that delay is dangerous. Many patients develop fatal conditions, many find operation necessary when in such a state as to make the operation exceedingly danderous, and some must be refused operation because of advanced complications, nearly all of which loss of life and health could have been prevented by early operation.

6. The chance of satisfactory improvement after the menopause is, speaking generally, more than overbalanced by the frequency of serious degenerative changes and complications.

7. We assume a grave responsibility when we advise a patient to wait until serious symptoms develop before having the tumor removed.

Early operation, under proper conditions, means small risk to the patient. Late operation means great risk.

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SUPRAPUBIC CYSTOTOMY AS A PRELIMINARY TO, AND AS A ROUTE FOR THE PERFORMANCE OF A CONSIDERABLE NUMBER OF PROSTATECTOMIES.*

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This paper does not contemplate a review of the etiology, pathology, symptoms and diagnosis of prostatic growths. Rather it will have to do with the benefits resulting from preliminary suprapubic drainage in the obstructive ammonical, or infective cystites, the removal of calculi, and, in many cases, the immediate or deferred enucleation of the prostate, or the offending portion thereof, through the same route.

Prostatectomy in the last decade has come rapidly into prominence. Like other surgical procedures on organs to which little attention had previously been given, it has rapidly assumed all the features of a fad. The pendulum by the action of extremists has, it seems, been forced beyond the limits of its usual excursion. By reason of the vying efforts of surgeons to devise new methods or routes of attack upon and for the removal of the prostate, the possible preservation of its function, and even the life of the patient has been in many cases, it appears, lost sight of.

In a general way it may be said that the success of operations on organs deeply seated depends upon the knowledge one possesses of their structure, function, location, and relation to other organs, and, as well, the ability of the surgeon to determine the condition and particular portion of the organ involved, together with a perfect familiarity with the route, or routes, by which the organ may be most readily and satisfactorily reached.

Not only does this statement apply in regard to the prostate, but it applies with equal, if not greater force, when it comes to considering the obstructive urinary and systemic results of its overgrowth. Anything short of a perfect appreciation of these features impels many surgeons to at once subject their patients to tedious, life trying operations for the removal of the cause of the obstruction, rather than the life prolonging procedure of establishing vesical rest and drainage—the more trying measure of enucleation being essayed when the patient has reacted from the effects of the obstruction and can be hoped to fairly resist its shock.

It would transcend the limits of this paper to go into a minute

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detailed description of the anatomy and function of the prostate. All that really concerns us here, is the gross anatomy. It will therefore serve our purpose to describe it as a musculo-glandular organ about the size and shape of a horse-chestnut surrounding the first inch and a quarter of the urethra, or neck of the bladder. It is located below and behind the os pubis, above and behind the deep layer of the triangular ligament, in front of the rectum and below and in front of the base of the bladder. It is composed of two lobes and an isthmus, the latter located mainly between the ejaculatory ducts behind and below the floor of the prostatic urethra and below its vesical orifice. It is a sexual organ of a sensory, secretory, and muscular character. On account of its attachments and relations, it is almost immobile. When affected by tumorous growths, by reason of its limitations, they can only enlarge to any considerable extent in the direction of either the rectum or bladder. While in no sense a urinary organ, its principle symptoms when affected are of an obstructive urinary character, i. e., frequent, painful urination, partial or complete retention.

Prostatism, while possible of recognition in its earlier stages by experienced surgeons, as a rule creeps upon the individual insiduously, frequently reaching an advanced stage—the patient having accommodated himself to this or that discomfort many times without consulting his family physician. When compelled to call upon his medical adviser for help, he is usually relieved of his acute retention, or other symptom, and taught the use of the catheter as a measure of relief. The result of such procrastination is that the major portion of the cases falling into the hands of the surgeon are affected not only with this or that form of prostate pathology, but have in addition grave alterations of an obstructive or infective nature in the bladder, ureters, kidneys, and, as well, a pronounced toxicosis attended by gastro-intestinal disturbance and malnutrition.

In order to establish limitations for preliminary supra-pubic cystotomy in this connection, we will divide prostatics as regards their surgical importance into three classes as follows: (1). Those who are between the ages of 45 and 65 years, who pass water voluntarily, are only compelled to urinate once or twice at night, in whom the retained urine is small in amount and does not undergo rapid decomposition changes without bladder irrigations, and who do not reveal albumen and casts upon urinary examination. (2). Those compelled to urinate frequently at night, who suffer from considerable retention, decomposition, and recurring attacks of acute cystitis, who have damaged kidneys from obstructive or infective causes, shown by albumen, casts, and a chronic uremo-septic condition. (3). Those who have passed through, or who have any or all of those features mentioned in class two, plus a sudden complete retention thus creating an emergency which calls for some form of immediate surgical interference in order to prolong the patient's life.

In class one, no claim is made that preliminary urinary drainage is absolutely necessary, but, if doubt exists as to the outcome of severe surgical procedure, time sufficient should be taken to throughly prepare the patient for the shock, which in some instances appears to be out of proportion to the character of the operation. If stone be present, a cystotomy might well be the first step to a future prostatectomy. By drainage and bladder irrigations the infected and over worked viscus is given rest and soothed to a degree which allows it to rapidly return as nearly as possible to its normal condition.

In class two, the urgency which exists, in the majority of these cases, is not for the immediate removal of the prostate, but rather a distinct indication for good vesical drainage and rest thus relieving the bladder, ureters and kidneys, which have been mechanically obstructed and possibly infected for years. These cases present a greatly reduced resistance owing to defective elimination and the constant poisonous influence of the uremo-septic products in the blood upon such vital structures as the heart, circulatory, and nervous systems. The hepatic and gastro-intestinal involvement help to bring about the anemia and resulting malnutritive condition. The age of these patients, in itself an important factor, is usually above 65 years. The occasional, or frequent use of the catheter, is their habit. They frequently offer little hope for immediate major surgical shock, but can often be carried successfully through the more serious operation following a cystotomy, a week or ten days being allowed for drainage and the use of tonics, eliminatives, etc., with a view of removal of toxic products and the building up of the vital powers of the patient to a maximum.

In class three, are included those who have been going from bad to worse as noted in class two, and in whom for various reasons, such as recurring acute exacerbations of cystitis or nephritis, attended by sudden and complete retention, an emergency exists which must be met by an immediate surgical measure with a view of giving either temporary or permanent relief. These patients are in no condition to withstand grave surgical shock on account of the extreme prostration, the result of an acute uremo-septicemia engrafted upon the pre-existing chronic toxicosis. Catheter life in most instances has been the rule, and the continuous mechanical and frequent septic results attending the use of this instrument have added their quota to the pathology, and indeed, often precipitated the crisis which creates the imperative demand for immediate operative interference which should be attended by a minimum of shock and intended to only relieve the existing extremity and prolong life. In these cases a prostatectomy by any route and with any form of anaesthesia is almost certain to result fatally. Even a supra-pubic cystotomy rapidly done under infiltration anaesthesia, or with ethyl-chloride, while offering the only hope, is uncertain regarding its prognosis.

In class two, if stone be found to be present, or if the pathology be located in the so-called median, or in the posterior part of the lateral lobes, the tumorous masses bulging into the bladder, and the general condition of the patient is such as to warrant one in believing, that he can withstand some additional shock and the urine is free from septic elements, a general anaesthetic should be administered and a supra-pubic cystotomy rapidly done and the stones removed or the offending portion of the prostate enucleated at once.

After the bladder has been opened it requires but litle time to locate and remove stones. The examining finger in the bladder reenforced by the first two fingers of the other hand, or those of an assistant, in the rectum acting as an elevator enables the surgeon to quickly determine whether the operation can more satisfactorily include the enucleation of the growth by this route. The intra-vesical ocular advantages offered by this route also recommend it in those cases in which it is indicated. If it is decided that the operation can safely be extended to include the removal of the prostate or the diseased portion of same, a longitudinal incision about one inch long should be made through the bladder mucous membrane in the median line below, or slightly to one side of the vesical orifice of the urethra and the enucleation proceeded with after the method of Fuller. The cavity from which the mass has been removed may be packed lightly, or, if hemorrhage be considerable, tightly with gauze, a portion of which is allowed to extend out at the lower angle of the belly wound alongside the drainage tube. After twenty-four or forty-eight hours, this may be removed, the drainage tube being left until the urine is free from traces of blood and is normal in other respects. Bladder irrigations should be instituted and maintained to help bring this about. The tube may then be removed and the bladder and belly wound closed by suture or allowed to heal spontaneously.

In class three, there exists as before stated only one indication for surgical interference, and that is an immediate and imperative demand for vesical rest and drainage and to relieve the profound obstructive kidney and systemic disturbance, thus prolonging life. The surgeon who has regard for the reputation of surgery will hesitate many a time, and rightly so, before subjecting his aged, poisoned and enfeebled patient to a major operation with its maximum of shock in order to remove an obstruction, when the effects of that obstruction can better be obviated by a minor operation with a minimum of shock, thus relieving damaged kidneys and enabling the system to not only eliminate poisonous products, but to, in a great measure, over-come the existing dyscrasia. By rapidly making a supra-pubic cystotomy with infiltration or ethyl chloride anæsthesia syphon drainage can be established for a period of from one to two weeks, enabling the patient to regain his usual health and resistance before subjecting him

to the more formidable operation of removal of the prostate. The patient during the interim between operations can, by use of a rubber urinal strapped to his thigh, sit up in a wheel chair, or in many cases be permitted to walk about. During this time the free use of water, urinary antiseptics, mild laxatives and easily digested nutritious food together with bladder irrigations, should be resorted to.

Drainage by the supra-pubic route is to my mind the ideal method for the following reasons: 1st. Drainage is perfect as the water is siphoned off, and by reason of this the tube does not become filled with salts and mucus settlings, as is the case with the perineal tube. 2nd. The tendency of the bladder contractions, should any occur, is not to expel the tube, as in the case of the perineal tube. 3rd. In case the tube is expelled, it can be easily and painlessly replaced. 4th. In case the tube is expelled drainage continues, which is not the case by the perineal route, as the internal sphincter closes allowing the retention of urine necessitating its periodical voidance, requiring bladder work, which we want to avoid. 5th. It admits of bladder irrigations. 6th. It allows rest and subdues chronic inflammation of both bladder and kidneys by removing the continuous intermittent pressure of a decomposed or septic fluid. 7th. It allows the urine to become almost, if not entirely free from septic and decomposition products, thus reducing the hazard of infection from the subsequent operation.

I make no claim that the supra-pubic is the easier route or even the one of choice for the performance of the major portion of prostatectomies. I do claim, that in many cases the immediate demand is for drainage and vesical rest. I prefer the supra-pubic route for this purpose, and if conditions are favorable the prostatectomy can be performed at the same time, although I find but few patients whose interests are not better safeguarded by deferring the prostatectomy until a later date, at which time it can be performed by the route which seems best adapted to the character of the growth.

The plea in this paper is for conservatism in the effort to prolong life in the case of the advanced and extreme prostatic.

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DISCUSSION.

Dr. E. G. Mark, of Kansas City: The point regarding the division of the cases into three classes seems to me to be an excellent one. While the operation of supra-pubic cystotomy is advocated as a preliminary one, in a number of cases it is acceptable and possibly indicated as a route for prostatectomy as well. At the same time it seems to me that as a drainage operation it should be left to that class designated in class 3, for these reasons—that in the first class there is no indication for drainage by the supra-pubic route and in the second class the urethra is almost certain to be permeable by a soft

rubber catheter. The possibilities of catheter drainage meet the indications equally as well as cystotomy. The time for prostatectomy is not when the patient has an infected bladder, etc., but when he is entering into prostatic life, when he has not become infected. He is then in the best condition to stand the operation. The indications for supra-pubic prostatectomy in these cases are where the prostate is deeply placed in the perineum, or the growth is intravisical, or complicated by a large calculus. Certainly in perineal operations which have been so highly recommended by Young and Murphy of Chicago, the rectum is too liable to be injured. In a deep perineum, it requires extremely delicate work to keep from injuring the rectum. In the anterior operation, this unfortunate accident is obviated.

Dr. W. H. Coffey, of Kansas City: This is one of the conditions in which the surgeon has done wonders. We all know that not so many years ago when these old people came to us for relief we gave them a catheter and told them to use it and let them die. Now we are doing a great deal of good for these old people. These cases nearly always have hemorrhoids, so frequently that we can almost call them a constant accompaniment of enlargement of this gland. The point I wish to especially emphasize is in removing the gland, if the rectum should be injured, the most feasible and proper thing to do is to dissect the bowel up to the site of the injury and bringing it down to the anus suture it to your incision at Hellon's white line, or in other words do a modified Whitehead's operation.

Dr. G. Wiley Broome of St. Louis: I commend this paper especially for its conservatism. We are just about to emerge from a very serious crusade against the prostate. The surgical profession in this country, as well as abroad, has been exercising every effort in urging the removal of the prostate for in many instances only slight retention. I have examined about three hundred pathological specimens of the prostate and have learned many things never mentioned in papers written on the subject of prostatectomy. In the first place, there may be a very greatly enlarged prostate which yet may not be the cause of the retention of the urine. The fact that the prostate is enlarged does not particularly mean that it is causing the retention. There are only two lobes to the prostate while it is in a normal condition. After the hyperplastic process is advanced, there are no longer two lobes, the lobes having coalesced into one mass. It is then impossible to enucleate. I like the idea of making a preliminary supra-pubic opening because by do doing you can examine the inside of the bladder carefully and determine whether there is any foreign substance in the bladder. Then you can drain, for the chief thing to accomplish is to remove the residual urine from the bladder and to afford the patient relief from the bladder distress. This will make him comfortable, give him rest and sleep and you will have accomplished every indication.

Although I have examined the subject thoroughly I have never commended routine prostatectomy. When I find that the vesical orifice of the uretha is elevated a considerable distance above the floor of the bladder, which is the condition always present and the cause of the retention in prostatic hypertrophy, I introduce a tube mid-way between the urethra and the rectum and push it up into the bladder behind the prostate. Then I introduce a plunger to clean and draw the urine from the bladder. This tube I leave in situs. I believe the time is coming when there will not be so many prostatecomies made. I believe the day of the routine practice is about over. Young's statement to which one of the speakers referred contains many errors. One is that he preserves the sexual puissance. That is absolutely impossible because the obstructive influences of the prostate are behind the seminal canals. The promise to preserve for the patient the seminal ducts in the prostate, is in my judgment, a hope held before the prostatics, which they can never realize. After a patient has undergone the operation of prostatectomy all seminal communication between the testicles and the fenile organ is destroyed. Hence the promised puissance becomes a myth.

Dr. J. C. Morfit, of St. Louis: I do not believe in operating on a prostate because it has enlarged, but I do believe that an *obstructing* prostate calls for an operation, whether it is enlarged or not. The worst and most annoying prostate that I have seen was one that was very small, symmetrically enlarged, in which the patient had to use progressively smaller catheter to draw the urine and had to pass all the urine through the catheter. I removed all of the prostate and drained through the perineum. The man is now able to control the passage of urine and has been since ten days after the operation. There are some cases where there is obstruction without infection. Obviously these, when operated on give the best and quickest cures. When complicated by infection we have to modify our technique and treat the sepsis as well as the obstruction. But the sepsis is the paramount condition. The trouble to be overcome makes drainage necessary. Whether we shall drain from above or below, will be a mooted question for some time, but perfect drainage and rest must be procured. Personally I prefer the perineal route. Age has little to do with these cases. An enlarged prostate is quite as serious to an old man as it would be to one half his age.

Dr. E. G. Mark, of Kansas City: I only rise to say that I did not mean to intimate that I would do a wholesale prostatectomy on all patients over the age of forty-five years. I would limit it to those in which we find that there is residuum dependent upon enlargement.

Dr. Beedle of Kansas City: In the first place, I believe that every case requiring prostatectomy is a case by itself for individual consideration as to the most advantageous route for operation. The size of the

growth and irregular development of the formation have a bearing upon the nature of the treatment. We should operate only when operation is absolutely necessary and then only when the case is ripe for this surgical procedure. The results are what count after all, and no surgeon should cater to one preferable route in all cases irrespective of its suitableness to the character of the prostatic obstruction. I am inclined to favor cystotomy method which I believe is applicable in the majority of cases permitting favorably of the most essential things to be considered. It permits of the quickest way to reach the prostate, time being of the greatest importance as these old people stand prolonged anesthesia badly. We want as good drainage as possible, and drainage through the perineal route is much better than that through the supra-pubic; again this route gives us direct and complete access to the field of operation, the room for manipulation is better and there is less danger of tearing the rectum if adhesion are very dense, than through supra-pubic cystotomy.

A few points in respect to the operation that I prefer. A short vertical incision down to and through membraneous urethra while the levator ani is retracted, with one finger of gloved hand in rectum as a guide, the bowel is safely freed from the tumor; the glove is then removed and same finger used as retractor in the bladder. For several reasons I believe the finger the best form of retractor for this work: the growth is enucleated and drainage tube fixed. I have practiced placing a soft catheter and draining the bladder for several days previous to operation and in connection with internal antiseptic have had my best results.

Dr. C. G. Geiger: The theory has been advanced that better results would be had by drainage through the rectum than by dilating. That is all right if you want your patient to go through life with a fistulous opening. An hypertrophied prostate does not, as a rule, interfere with the urine unless there is hypertrophy of the middle lobe. It is also true that we can have hypertrophy of the two lateral lobes without interference with urination. I think Bottini's operation will meet with greater favor in the future than it has in the past. The middle lobe, when it is hypertrophied, does interfere. In most cases where interference is present, the middle lobe is very much enlarged. It is proper to go in and relieve the infected condition, and, if necessary, open the perineum and enucleate the entire prostatic gland.

Dr. Elam, in closing: I certainly feel gratified at the reception of my paper. I did not contemplate going over the entire field of prostatic surgery, nor of dealing with the technic of the various operations, nor the benefits of one operation over any other, nor do I announce my preference of routes. My paper stuck pretty close to the title. The title was "Supra-pubic Cystotomy as a Preliminary to, and as a Route for the Performance of a Considerable Number of Pros-

tatectomies." The object of my paper was to call attention, not so much to those prostatics who very seldom consult the surgeon or urologist, or those prostatics who, for various reasons, only now and then call in their family physician perhaps for the removal of a little urine, but it was for the purpose of calling attention to the prostatics in whom a considerable amount of urine is retained, and undergoing decomposition, demanding the frequent use of the catheter. As you all know, the more frequently the catheter is used, the greater the chance of infection and for obstructive involvement of the ureters, kidneys, and the system as well, resulting in a chronic uremia, this in turn affecting the vital organs of the body. I claim that drainage is the important thing to consider first. It becomes imperative if there is acute retention and infection, especially if we would prolong the life, comfort and usefulness of the patient. You can remove the prostate later if necessary. The thing to do is to relieve the urgent symptoms, taking your time to remove the cause of the obstruction. As to what Dr. Marks has said, I did not intend to go into the merits of perineal and supra-pubic cystotomy, but will say for his benefit that I expect I will perform as many perineal prostatectomies as I do supra-pubic prostatectomies, yet I have found cases where I could remove the obstructing body almost entire, especially if it consisted of a tumorous mass springing from the so-called middle lobe, and my patients get along with the other lobes until some other time. In three or four instances, I have never had to remove the lateral lobes. I will mention one case just to show the advantages of supra-pubic drainage and letting things take their course. This patient was 76 years of age. He was accustomed to use the catheter occasionally. I was called to see him and found him suffering with acute retention cystitis, nephritis and acute uremo-septic poisoning. I made a supra-pubic cystotomy for drainage. He went two years without any trouble, though his urine occasionally became strong, I was then again called to take his case in charge. I did another operation and he went that time for about nine months. He then used the catheter, and became infected so that it was necessary to open him up again. I then removed the offending prostate. He lived to be over eighty-six years of age. I am satisfied that as a result of these two cystotomies his life was prolonged for a long time. There is a time when this operation is indicated in class two, and that is where there is a uremo-septic condition, where acute retention comes on and infection exists. If you permit septic urine to remain in the bladder you will have chronic septicaemia. These old men do not respond and react to sepsis as younger and full blooded patients do. Acute septicaemia depresses them and they die apparently from asthenia and yet it is in my opinion septicaemia that kills them.

INTESTINAL AUTOINTOXICATION.*

BY J. B. NORMAN, M. D., CALIFORNIA, MO.

The conclusions formed by the general practitioner upon any medical subject, must almost of necessity be based upon clinical observation. While they may not always be correct, yet as a whole, they prove or disprove the investigations and theories of the laboratory pathologist, and give practical utility to the truths he discovers. The system of alimentation in health and disease, is universal and demands and should receive the careful consideration of every practitioner either general or special. Digestion, assimilation and nutrition occupy a prominent place in the therapeutics of almost every known malady. It is in disease, that we are interested in the best possible exercise of these functions obtainable under the restricted conditions, and upon the proper exercise of these functions depends in large measure the success or failure of treatment.

The transformation of food products into substances capable of assimilation is a complex process, and any disturbance of its normal equilibrium gives rise to symptoms more or less distressing either in health or disease. The introduction of unsterilized food, water and air into the stomach and intestines, necessarily carries with it many forms of bacteria, where conditions as food, heat and moisture, are most favorable for their development. The normal secretion of the normal digestive juices unquestionably exercises an inhibiting influence on the multiplication and development of the bacteria so introduced. Notwithstanding this inhibiting control, the action of the digestive secretions is not in a true sense, germicidal, but only serves to prevent the rapid multiplication and growth of bacteria.

There are then, normally and at all times in the intestinal canal, a countless number of bacteria whose toxins, absorbed into the circulation, are poisonous to the tissues of the human body. In addition to this, there are mineral and chemical substances, derived from the food and from the secretions themselves, such as potash, biliary coloring matter and biliary salts, which are distinctively poisonous to the tissues. Many of these absorbed by the portal circulation, are destroyed or transformed by the liver, and the remainder or a part of it is eliminated by the kidneys; and the whole quantity is reduced to a residual not incompatible with a fair degree of health. Thus it would appear that Bouchard's statement, "Man is constantly menaced

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by the poisons of his own body," is correct, even though it be considered only from the standpoint of intestinal autointoxication.

When, from the ingestion of indigestible food, or from the improper mastication of ordinarily digestible food, the digestive secretions are overtaxed beyond their capacity; or if, from mental worry, nervous shock or traumatism, the equilibrium of the digestive secretions is disturbed; or if, in a sudden change from an active to a sedentary life, the amount of digestive secretions is decreased while the food ingested remains the same in kind and amount, the restraining influence of digestion over the bacteria of the intestinal canal becomes inadequate and with their increased multiplication and virility, toxins are formed beyond the capacity of the liver to destroy and the kidneys to eliminate and we have the tissues of the body poisoned. There follows a train of subjective symptoms as headache, shivering, muscular aching, bitter taste, coated tongue, fever, etc., which we denominate biliousness, or acute intestinal autointoxication. This condition is one with which the general practitioner has to do perhaps more often than any other. It is one due wholly, to a disturbance of the relation between the formation and elimination of intestinal toxins. If from any cause, the permeability of the kidney is decreased or the activity of the liver diminished to a degree that leaves an excess of intestinal toxins, the same condition obtains. After the ingestion of putrid food, as tainted meats, spoiled vegetables, spoiled food of any kind, there follows an anomalous fermentation, a putrefactive process, generating toxins, ptomains and alkaloids, both known and unknown whose effect on the system varies in degree from a simple biliousness to a most virulent ptomain poisoning.

Fortunately the treatment of the conditions I have so far described, in this paper, is both simple and effective. To establish free drainage of the alimentary tract, withhold all foods until such time as the digestive organs seem capable of taking care of it; to decrease fermentation or putrefaction by some bland, reliable intestinal antiseptic, and to restore, if necessary, the activity of the kidneys and liver, result, almost invariably, in a rapid subsidence of all symptoms.

Acute intestinal autointoxication occurring in otherwise healthy individuals, is of such little consequence as to scarcely arouse the consideration of the physician; but when it occurs, as it frequently does, as a complication of a serious and dread disease, it is then well worthy our earnest, most careful thought. In typhoid fever, with the principal, if not the only lesion, located in the intestines, with a temperature above normal and the digestive secretions disturbed or perverted, we have a condition highly favorable to the development of putrefactive germs. The meteorism and tympanites, the malodorous stools, combined with every subjective symptom which attest the presence of intestinal putrefaction at other times, speak, authoritatively of

its presence here. I believe and am fully convinced, that the fever of typhoid fever is a result of the typhoid infection upon which is implanted an intestinal autointoxication due to putrefactive germs. The treatment of typhoid fever is then the treatment of acute intestinal autointoxication, plus the additional treatment of typhoid fever per se. Intestinal drainage, intestinal antisepsis, diet and elimination are important therapeutic measures; and experience teaches us, are effective ones.

Laboratory pathologists tell us that intestinal antiseptics are unavailing; that it is utterly impossible to render the intestinal canal aseptic. Because we cannot clean out and kill every germ in the intestinal tract, it does not follow, that by suitable treatment, we cannot inhibit the growth and virility of putrefactive germs, or even the bacillus typhosis. Upon what other hypothesis can you explain the rapid abatement of all subjective symptoms, the uniform decline of temperature, and the disappearance of tympanites and malodorous discharge which invariably follow the administration of reliable intestinal antiseptics, laxatives and careful feeding? With a mortality far below that of any other line of treatment with which I am familiar, results argue more eloquently than words.

What is true of typhoid fever, is in a lesser degree true of any continued fever. Continuous hyperpyrexia alone disturbs and perverts the digestive function and exercises an influence favorable to the development of intestinal germs. It follows then that in every continued fever, there is an element of intestinal autointoxication with which nature and the physician must reckon. The alimentiveness of Americans as a race, the character of their food, their methods of eating and their habits of life are prone to beget disturbances of the digestive function. Because of this there are formed in the intestinal tube of some people, indol, acetone and various other toxins to an amount which continuously and perpetually taxes the powers of the digestive system to destroy or eliminate. The constant presence of these products of indigestion and putrefaction in the digestive tube, perverts the normal functions of the digestive organs and ultimately produces a chronic inflammation of the gastric or intestinal mucosa. The increased amount of poisons which the blood receives from the intestines as a sequence of these changes, falls to the lot of the kidneys to eliminate, and this too in addition to the work of the kidneys in eliminating the products of general metabolism of the body. The increased work thus thrown upon the kidneys, perhaps combined with an unusual irritating quality of the poisons generated in the intestines, keeps the Malpighians bodies and tubules in a more or less constant state of irritation and ultimately develop a true inflammation or nephritis. The frequent association of gastro-intestinal

disease with nephritis, in my opinion gives support to the theory of a causal relation.

Time nor space will not permit me to discuss the many diseases toward which intestinal intoxication bears either a causal or a complicative relation. As a mere suggestion, I may mention uremia, mental diseases, convulsions, epilepsy, migraine, neuritis, cystitis, skin diseases, malignancy and many others.

ETIOLOGY OF ACCESSORY SINUS DISEASE.*

BY FAYETTE C. EWING, M. D., ST. LOUIS.

The accessory sinus include the frontal, maxillary, ethmoid, and sphenoid. The causes of their diseases may be classified, as Common and Special.

Common, as applying to such factors as are productive of disease in each and all; special, as bearing upon the pathology of one or more but not all. Their classification has been hit upon for the sake of brevity, and in the belief that in the limited time at my disposal it will enable my hearers to carry in mind the essential, and most important of the contributory causes of such diseases as these cavities are subject to, thus elucidating the diagnosis and treatment which will be ably discussed by my successors in this symposium. Furthermore, in emphasizing the causes common to all, by placing them together, I may hope to impress the general practitioner, (whose aggregate of knowledge so much supersedes that of the mere specialist) with what may be most serviceable hereafter in his hurried life.

The constant accompaniment of all sinus disease is *inflammation*. But, inflammation is a condition not a cause. To name inflammation as a disease and direct against it our therapy would be to violate the basic principle of all therapy, which aims at the removal of the cause. Inflammation then, though it must be reckoned with, in diagnosis and treatment, is secondary, though indissoluble from any consideration of the etiology of sinus disease. Inflammation in the sinus may arise, and most frequently does, from a like condition in the nasal chambers. It may have its source in a simple rhinitis by extension since the lining membranes of the sinus are continuous with that of the nasal passages. The strumous and tuberculous diatheses rendering the individual more subject to rhinitis becomes influential in the greater liability to sinusitis both through frequency of rhinitis and in the special susceptibility of the sinus membrane. Pyogenic and micro-organisms operating in the nasal-passages, may infect these cavities by continuity and contiguity of tissue or by direct lodgment. Doubtless many

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unclassified germs, of which the nose is full, play a part is cases in which the etiology is obscure. The exanthemata, diphtheria, and atrophic rhinitis must be considered as causative of such suppurations. Metastasis and actinomycosis, may, though very rarely, account for them. Worms and insects may find their way into the innocent body of the sinus, after the manner of original sin, acting as the first offence. Foreign bodies and micro-organisms may be washed in by the douche or blown in by the inflator. It is not uncommon for syphilitic necrosis to be set up in the sinus or find its way by extension. The same disease process may occasion sinus disease by dislodgment of bone adjacent to their outlets blocking the passages. Various malformations, interfering with drainage, and the circulation of air, tend to produce inflammatory process. Obstruction, from whatever cause, is one of the most potent of all factors in the development of inflammatory conditions. Other causes of obstruction than those enumerated are hyperplastic rhinitis and tumors, such as myxomata, fibroid and osteomata.

The condition known as mucocele may be formed in any of the sinuses, and is due to prolonged catarrhal inflammation, resulting in cell proliferation, and the formation of a myxomatous mass enclosed in a thin sac. It is of infrequent occurrence. It is possible for systemic poisonings from minerals and metals to affect any of the sinuses.

Having enumerated the known causes of disease in all the sinuses, I shall now take them up separately and dwell more particularly upon the etiology special to one or more, but not to all four.

From a pathological point of view the most important is the maxillary sinus. Owing to its peculiarities and eccentricities of construction and anatomical relationship to adjacent parts, it is the one most frequently subject to chronic disease. It is a closed cavity except for one, sometimes two, small openings near the top which lead into the middle meatus of the nose. These openings are named *ostium maxillare*, and *ostium maxillare accessorius*. Catarrhal accumulations in the antrum can find no natural outlet except by overflow through these passages, and when this occurs there must of necessity be retention almost equivalent to the capacity of the cavity. Sometimes these openings are situated abnormally high, even above the level of the floor of the orbit. The position of the *ostium maxillare* is in direct line with the drippings of pus from a diseased ethmoid or frontal sinus the downflow from which easily enters into the antrum, setting up disease therein. Even if the pus does not find its way into the antrum it acts as an irritant to the mucous membrane lining the small opening of and about the *ostium maxillare* producing turgesence and obstruction with a resultant sinusitis. The antrum is subject to great variations in shape, differing materially on opposite sides in the same individual, sometimes adding to the difficulties of drainage. It is by no means

smooth within, the line of molars projecting well up into the floor, while the superior dental nerves and vessels traverse the spaces to their distribution. Where branches of the superior dental nerve sometimes pass over the floor the mucous membrane is exceedingly thin which explains the excruciating pain sometimes experienced in comparatively slight accumulations of fluid. Perhaps the teeth should be reckoned the most frequent single cause of antral disease, and it behooves the practitioner to look well to them. If he have not a thorough knowledge of their anatomical relationship to the antrum he should seek advice. A decayed root, or obscure snag may be creative of much mischief. It is possible for foreign bodies to find their way into the antrum, which when once in are naturally retained.

Emphysema is sometimes set up in the antrum, and though it is a rare affection when present it is of much importance. It is caused by the generation of gases by decayed teeth. From the teeth may also arise the so-called dentigerous cyst. Other cysts may develop from the enlargement of the follicles lining the cavity.

In the frontal sinus, none of the causes of disease to which I have alluded are as important in children as in adults. Before the 20th year since the cavity is not fully developed the prominence of this sinus renders its walls particularly susceptible to compound fracture adding to its possible injury and obstruction over the others. On the other hand its position, with natural drainage from the bottom, saves it from suppuration which often would otherwise occur. It is frequently attacked by the catarrhal process, in connection with rhinitis, which proceeds no further.

In connection with the ethmoid sinus, there is little to add to the aggregate of etiologic factors mentioned in my general summary. However, some consideration of its peculiarities of anatomical construction and regional relationship should be accorded, adding to its individual susceptibility from causes that may also operate in the pathology of the others. The ethmoid cells anteriorly may be bathed in the pus from the frontal sinus while the posterior cells by their proximity to the sphenoid sinus may be similarly affected in disease of this cavity. Under certain conditions pus from the maxillary antrum may penetrate into the anterior cells, all of which explains the obscurity of symptoms when only one of the other three sinuses is suspected as their source. Obscure, offensive and obdurate discharges that have been diagnosed as rhinitis are in reality due to suppurating ethmoiditis. The pronouncedly cellular formation of the ethmoid renders its mucous membrane very thin, and closely connected to the bony framework, making it more susceptible to injury and catarrhal disease than the kind we usually have to deal with. Furthermore, the construction is such that pus is not freely discharged from the honey-comb like chambers. Basal fracture of the skull may involve the ethmoid,

while a blow on the nose may fracture the vomer, loosening it from its connection, with injury and exposure of the cells. Violent intranasal operations, particularly upon the septum may produce a like result. Phosphorous poisoning has been known to center upon these cells.

The sphenoid sinus has no etiology of disease peculiar to itself. All causes leading to inflammatory conditions in it have been mentioned in my general classification.

Situated as it is in the center of the head, and far from the possibility of direct exposure, its disease is almost always secondary and by extension following disease of the other sinuses, or in the nasal or postnasal spaces, pus may gain entrance into it by rupture of the wall separating it from the ethmoid sinus.

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THE DIAGNOSIS OF INFLAMMATORY DISEASES OF THE ACCESSORY SINUSES OF THE NOSE.*

BY GREENFIELD SLUDER, M. D., ST. LOUIS.

By disease of the accessory sinuses of the nose is usually meant, suppuration of one or more of these sinuses and it is of this I shall speak in particular.

Acute inflammation of high grade, involving the accessory sinuses of the nose, one or more, with or without obstruction to their drainage, is very apt to be accompanied by more or less pain. Should the drainage be obstructed the pain will be very great.

The history of the case and the location of the pain are sometimes of great service in making a diagnosis.

Often the history will be given of a profuse, purulent discharge that had existed several days when it suddenly stopped. The pain which had been insignificant up to that time suddenly became intense. (It is usually described as neuralgia). Should the obstruction be complete the history will go to show that the pain increased in severity for still a short time when it in turn stopped. The discharge from the nose will then have become re-established by way of its natural outlet into the nose, or one of the walls of the involved sinus will be found to have given away producing an orbital phlegmon, or a meningitis according as it opened into the orbit or the cranium.

The location and character of the pain are frequently of service in making the diagnosis but not invariably so.

The pain produced by the disease of the frontal sinus is usually referred to the immediate frontal region of the side involved. It may, however, be referred to the lateral aspect of the brow. In acute cases

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it is cyclical. In old cases it may be constant. The pain begins some time in the morning. In cases of medium severity it may begin at half past seven or eight o'clock and reach its height by nine or half past and, slowly subsiding, disappear by eleven to twelve o'clock. As the severity of the case increases the pain will begin earlier and stop later; beginning even at four A. M. and not stopping until eight P. M. with the marked and constant characteristic, however, that the night will be free of pain and usually spent in restful sleep. I think that this is the condition that has sometimes been given the name of "Sun-pain" and thought to be supraorbital neuralgia and of malarial origin.

Frontal sinus pain in general may very readily be confounded with the pain of supraorbital neuralgia because of the two structures being anatomically so near to each other. In this connection I should like specially to mention a point that has been of great service to me in this differential diagnosis.

Normally the supraorbital nerve lying in its notch at the junction of the inner with the middle third of the upper line of the orbit, is distinctly more sensitive to pressure than the bone of the upper, inner angle of the orbit; namely, that portion which is made by the frontal sinus; and this is still more marked in supraorbital neuralgia according to its degree of severity.

In disease of the frontal sinus, especially the acute inflammatory troubles this relationship is markedly altered, in fact reversed. The orbital wall of the frontal sinus then becomes very much more sensitive than the supraorbital nerve. The only exception that I have found to this rule is in skulls of unusually great thickness of bone. In these the pain of a closed empyema may be very great and at the same time the sinus externally may betray no tenderness to ordinary pressure.

The pain produced by disease of the anterior ethmoid is usually spoken of as being behind the eye.

The pain produced by disease of the antrum is referred to the cheek. It may be absent, however, if the anterior bony wall be thick so that the canals for the upper dental nerves as they descend within this wall lie sufficiently deep to give the nerves protection from the antrum inflammation.

The pain produced by disease of the posterior ethmoid is usually referred to the parietal eminence; sometimes to the temple.

The pain produced by disease of the sphenoid is usually referred to the occiput; sometimes to the region of the mastoid.

The diagnosis within the nose is made by finding the pus a[illegible] cating its origin.

The most easily recognizable form of this is that in which th[illegible] eased sinus pours forth a stream of pus continuously it appearing in

the nose at, or near, the natural outlet of the sinus, being readily visible by an ordinary rhinoscopic examination.'

This picture, however, assumes that the bony relationships within the nose are normal; that there is plenty of room for the turbinates and no obstructing hypertrophies nor deviated septum, nor polyps. Under these conditions pus from the frontal sinus will pour from under the middle turbinate at a point very near its anterior end. Pus from the anterior labyrinth of the ethmoid will pour from under the middle turbinate at a point near its middle. Pus from the antrum of Highmore will pour, usually, from under the posterior third of the middle turbinate and frequently be visible only by posterior rhinoscopic examination. Pus from the posterior labyrinth of the ethmoid will pour over the posterior third of the middle turbinate—that is from between the middle and upper turbinates. Pus from the sphenoid pours from a point above the upper turbinate and posterior to it.

Pus from the posterior ethmoid and sphenoid is most frequently seen from behind—most frequently flows into the throat. That from the sphenoid will flow entirely down the posterior wall of the nasopharynx. In this connection may come the question whether this does not come from the median recess of the pharyngeal tonsil. If the median recess be the origin of the pus the stream will be found, as it is followed upward in the post-nasal glass, to stop at this point.

The diagnosis becomes more difficult in the presence of almost any change that departs from the normal.

An hypertrophy of the anterior end of the middle turbinate may close the middle meatus anteriorly in such a way that pus from the frontal sinus does not appear near the anterior portion but is carried backwards so as to appear in common with that of the ethmoid, or antrum, or to simulate either or both of these if they are not suppurating. (This same picture would be produced by the simple lapping of the turbinate tight on to the lateral wall with or without hypertrophy.)

A suppurating antrum may simulate in appearance a suppurating frontal should the opening of the antrum lie in the forward upper part of the hiatus semilunarius, as it sometimes does instead of what is the most frequent site, the posterior third of the middle meatus.

A swelling of the posterior tip of the middle turbinate will frequently make difficult the separation of posterior ethmoidal from sphenoidal suppuration.

A general swelling of the middle turbinate may change the olfactory fissure into a cul-de-sac opening posteriorly which will behave as an additional accessory sinus simulating a post-ethmoidal or sphenoidal suppuration, or these combined. So then it becomes desirable to have a routine procedure for the differentiation of one of these from the others. The fact of the frontal, anterior ethmoid and the antrum of Highmore entering the nose by way of the middle meatus is the

anatomical explanation of how these may be confounded one with the other, as pus poured forth from one of these sinuses, or all of them together, may appear simply as pus from the middle meatus.

Some rhinologists use trans-illumination (the light placed in the mouth) as a diagnostic means to include or exclude, usually the antrum of Highmore, in this group. This has been unsatisfactory in my hands and seems to me must needs be unsatisfactory because the thickness of the bony walls may differ very greatly in the two sides of the same face with corresponding diminution of the size of the cavity within. The thick walled cavity will, of course, appear darker than the thin walled cavity and may still be perfectly free of pus within, or the thin walled cavity may contain pus and still appear no darker than the thick walled cavity without pus. So it seems to me, that the far more trustworthy method is the experimental puncture of the antrum at the point under the middle of the lower turbinate. A solution of boric acid is then washed through which brings out the pus if it be there, or returns clean if it be not there. The patient is examined again in the course of a few minutes, ten, fifteen or twenty minutes to see if the middle meatus still shows the pus. If the antrum be the only cavity suppurating, the middle meatus will not show pus again at the end of this short time, as it requires more time than this to fill it up to the point of overflowing. So that should pus be found in the meatus soon after the washing of the antrum it must needs come from the ethmoid or the frontal—their outlets being placed so as to permit an uninterrupted flow. The opening of the antrum on the other hand is placed near its top so that it requires time to fill up and overflow after having been emptied. This method has the advantage also of being curative in cases of recent suppuration; that is if the suppuration be of less than three months standing. In cases of recent suppuration without headache a differentiation of frontal from ethmoidal suppuration may often be neglected as these, too, may be expected to heal without radical interference. Should they not heal, the anterior two-thirds of the middle turbinate is then to be removed, which will lay bare the openings to the frontal and ethmoid. A probe may then be introduced into each of these cavities and on its withdrawal pus may be seen to follow it or not.

This method has also come to be known as the conservative treatment for frontal and ethmoidal suppuration.

In these cases the outflow of pus is assumed to be profuse and of not longer than a few months standing.

In cases of long standing and especially in those in which the discharge has become scanty and dries into a crust the diagnosis may be very difficult. The effect usually produced under these conditions is that of the destruction of the epithelium and shrinking of the soft parts and frequently of the turbinate bones.

Add to this picture the stench of decomposition (ozena) and you have a condition which stimulates very closely atrophic rhinitis. Then atrophic rhinitis, of long standing, often involves one or more of the accessory sinuses.

A differential diagnosis may sometimes be made by finding the trouble limited to one nostril which according to my understanding is an impossibility in atrophic rhinitis proper. The atrophy following an ancient sinus suppuration has, in my experience, been limited to the area bathed by the pus, for example if the pus be poured into the middle meatus and from there of course gravitating into the lower meatus the tissues in the middle and lower meatus will be found to be atrophic and to have lost their cilliated epithelium. On the other hand the tissues in the olfactory fissure not being bathed by the pus will be found normal.

The accessory sinuses of the nose may, though rarely, be inflamed to a considerable degree and so far as discoverable remain dry or secrete a small amount of thin, watery liquid apparently containing little or no mucous. The diagnosis of this condition is sometimes possible by finding an inflamed area surrounding the opening of the sinus with or without the secretion as the case may be.

THE TREATMENT OF DISEASES OF THE ACCESSORY SINUSES.*

BY M. A. GOLDSTEIN, M. D., ST. LOUIS.

The last decade has marked a new epoch of activity in intra-nasal surgery. This advancement has been especially noticeable in the disposal of the suppurative processes of the accessory sinuses. The *bete noir* of the rhinologist has been the long array of chronic suppurations as they occur so frequently in our temperate zones, suppurations induced by repeated coryzas, and various infectious processes.

The marked progress which has been made in the surgery of these areas has followed closely on the more intimate knowledge of the anatomy of the accessory spaces to the nose and the research and demonstration of the site of purulent foci lodged in these cells and sinuses.

Perhaps the most classical monograph to aid in the development of the work on the accessory sinuses was that of Grunewald, "Die Lehre von den Naseneiterungen." To this we must add the contributions of Onodi and Hajek on the anatomy and surgical technique, the brilliant original work of Killian and Jansen, and the practical modifications of technique as suggested by our own colleagues, Coakley, Behrens, Myles, and others, until today the sequelae of nasal suppuration ap-

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pear to us an open field, depending only on careful diagnosis and expert surgery for its radical cure.

In discussing the question of the treatment of the nasal sinuses, it will be well to differentiate what symptom-complex demands radical surgical intervention, and what class of cases can be satisfactorily disposed of without radical measures. In this enthusiastic and progressive age of surgery, there is a temptation to conduct our work along extreme and radical lines where simpler and more conservative treatment may be available.

I have taken as my task, therefore, to epitomize and group in the suppurative processes in each of the acessory sinuses the class of cases which may be treated along conservative lines on the one hand, and those which demand radical surgery on the other.

The Maxillary Sinus.—In acute empyema of the maxillary antrum, dependent on an acute nasal infection, or extending from an infected tooth through the alveolar process, where no destruction of the mucosa of the antrum has as yet occurred, where neither new tissue formation, granulation, nor neoplasms have developed; and where it is simply a question of draining the accumulated pus from the antrum; the simpler plan of trephining the alveolar process and flushing the antrum with antiseptic solutions will often prove effective in establishing definite cure. The technique is so simple that the patient should be given the benefit of this conservative treatment until more radical measures are proven necessary.

An equally simple technique is that of exploratory puncture through the nasal wall, usually made about the juncture of the anterior and middle third of the inferior turbinate near the natural nasal orifice of the maxillary sinus. The antrum may be flushed out through such an opening, and the character of the pus or washings from the cavity should be carefully examined. If this simple flushing of the antrum, either through the alveolar process or through the nasal openings, does not show evidence of relief of the suppurative condition, better and freer drainage must be established. The thin nasal wall of the antrum, through which probes, curettes, and canulas can be rapidly passed should be resected and the treatment of the antrum carried on through this artificial fenestrum. This procedure includes the preliminary removal of the anterior two-thirds of the inferior turbinate.

This constitutes to my mind, the limitations of conservative surgery of the maxillary sinuses. Should further steps be necessary to effect a cure, the radical operation through the canine fossa and malar ridge, and through curettement of the contents and mucosa of the antrum, should be undertaken. Radical surgery of the antrum is indicated where necrosis exists; where new growths have formed; where

constitutional dyscrasia, as of tuberculosis, syphilis, osteomyelitis, may be present; or where an extensive multiple sinusitis has occurred.

The Ethmoid Cells.—The ethmoid cells, because of their anatomical proximity to the frontal antrum and sphenoidal sinuses, and their close association with the orbit, the cribriform plate, and the cerebral meninges, and their intimate relationship to the turbinal tissues, are more frequently involved as suppurative foci than any of the other accessory spaces. We may gather from statistics of acute inflammations of the nose that the ethmoid cells are involved in over 70 per cent of all cases. They represent the connecting link between the nasal structures proper and all of the adjacent sinuses and deeper structures anatomically constituting the nasal fossae. In view of their very frequent involvement it is a satisfaction to the rhinologist to know that the ethmoid cells have the special advantage of being more easily accessible to simple surgical procedures than are any of the other sinuses; they may be opened, curetted, and thoroughly drained, without extensive surgery or external openings.

Even though the accessibility of these cells is simple, it is well to consider conservatism before a more direct attack and curettement of these areas is undertaken. There are many cases of acute suppurative rhinitis associated with involvement of the ethmoid cells which yield definitely and simply to topical treatment. It would be an extreme measure to urge the penetration of the ethmoid cells in each case where ethmoiditis can be diagnosed. In all simple acute ethmoiditis, therefore treatment should be directed toward simple drainage effected by means of cocaine, adrenalin, hot antiseptic douches if necessary, and astringent applications. If these fail to abort or relieve the acute inflammation and suppuration, the more radical treatment should be resorted to. This is accomplished by the removal of the anterior end or anterior two-thirds, if necessary, of the middle turbinate, after which the anterior cells of the ethmoid may be easily exposed, curetted, and treated.

The posterior ethmoid cells, because of their less accessible location and their close relation to the sphenoid sinus, are more difficult to reach by the simple intra-nasal route. The question of the external operation, as far as the ethmoid cells are concerned, is only to be considered when they are associated with suppurative processes of the frontal sinuses.

The Frontal Sinuses.—As is the case in the other sinuses, the treatment of frontal sinusitis may be defined, according to the character of the inflammation, and the intensity and extent of invasion, into conservative and radical technique. The results of those who have had the greatest experience in the treatment of frontal sinusitis show that in over 80 per cent. of acute frontal sinusitis complete recovery after intra-nasal treatment, including removal of the middle turbinate

to allow of free drainage from the naso-frontal duct into the middle meatus, the use of hot douches, and the topical application of cocaine and adrenlin. Coakley presents the following symptoms demanding external opening of the frontal sinus:

"*First.* Edema and redness of the upper eyelid, accompanied by throbbing pain over the sinus, provided they show a tendency to increase in severity for more than 24 hours after the resection of the anterior third of the middle turbinate and the thorough contraction of the mucous membrane in the middle meatus by means of local applications of adrenalin and cocaine.

Second. Marked prolapse of the orbital wall of the frontal sinus.

Third. Displacement of the globe of the eye downwards and outwards accompanied by diplopia.

Fourth. The development of a fistula at the upper angle of the orbit as evidenced by redness, great swelling, and fluctuation in this region.

Fifth. Intense supra-orbital and frontal pain which cannot be relieved by establishing adequate drainage through the naso-frontal duct with a tendency to an elevation in temperature and symptoms of beginning meningeal inflammation."

Chronic suppurative frontal sinusitis presupposes in its pathology the involvement of some of the neighboring sinuses, most usually the posterior ethmoid cells, because of their intimate relationship and because of their greater frequency and exposure to suppuration.

In the chronic suppurations, there is perhaps less opportunity to secure effective results by the intra-nasal route than may be obtained in the acute cases. But even here, all conservative measures should be given a fair trial before resorting to radical surgery. Not only is the radical surgery of the frontal sinus to be considered from the standpoint of a capital operation, but the cosmetic feature is one of much desideratum to the patient. Patients will yield to the external operation for the relief of suppuration of the frontal sinus only as a last resort. Then, too, we must not lose sight of the juxta-position of the frontal lobe of the brain, and the possibility of meningeal involvement of this area.

In chronic suppurative frontal sinusitis, the radical operation is indicated where acute exacerbations occur, or whenever any of the symptoms enumerated under the acute forms designated for radical invasion, develop; where polypi or other neoplasms are formed, and in short in all cases where a liberal trial by means of intra-nasal drainage fails to cure.

In the radical operation of the frontal sinus, two forms of technique are today recognized as the most satisfactory surgical procedures, and those affording the most definite results. These are

(a) The open operation, as suggested and described by Coakley, in which the same technique is employed as that used in the radical mastoid operation. The frontal sinus is opened and treated like a mastoid, and the wound packed from above downward thus promoting granulations about the bottom of the naso-frontal duct and the narrowest part of the cavity, and allowing the wound to close by granulations.

(b) The Killian operation, whereby not only the frontal sinus, but also the ethmoid cells, are entirely obliterated.

Much care and judgment is necessary to classify and select those of our cases demanding radical measures and those which can be properly treated along more conservative lines. And it will frequently tax the judgment and professional skill of the operator to decide this point sharply.

The Sphenoid Sinus.—Of all the accessory sinuses, the sphenoid cells are most difficult of surgical intervention, because of their greater inaccessibility by the intra-nasal route, their deep location in the nasal fossae, and their closer relations to the cranial cavity. Like those of the other sinuses, however, suppuration of the sphenoid sinus may be treated both conservatively and radically.

The conservative treatment consists of the establishment of free drainage through the sphenoid ostium and the removal of any nasal obstructions due to septal deformity or hypertrophied turbinate. It is rare to find sphenoid suppuration existing *per se*, the usual accompaniment being an empyema of the ethmoid, frontal or maxillary sinus. In the majority of cases, clinically, therefore, when the sphenoid is involved, we are dealing with a multiple sinusitis, and our surgical technique must also include these areas.

In acute suppurative invasion of the sphenoid sinus, a very large percentage of cases reported by many observers yield definitely to conservative intra-nasal treatment.

It is in chronic empyemata of the sphenoid sinus, especially when associated with similar conditions in the ethmoid, frontal or antral cells, that radical surgery is called for.

Radical surgery of the sphenoid should include any technique whereby the anterior wall is removed and the interior of the sinus exposed, whether such surgery be accomplished by the intra-nasal route where the ethmoid labyrinth is included, or by way of the frontal sinus through the ethmoid cells, or through the antrum of Highmore and the ethmoid cells.

In the selection of proper surgical intervention, the operator is influenced by the pathology and clinical features of each individual case. For example, if sphenoid empyema exists concomitantly with suppuration in the maxillary antrum and ethmoid cells, the route naturally to be selected for reaching the sphenoid area will be the

interior operation of the antrum of Highmore and through the ethmoid cells. If, on the other hand, a multiple sinusitis exists involving the sphenoid, posterior ethmoid and frontal sinuses, the operative technique by choice will be that of the exterior operation on the frontal sinus through the ethmoid cells to the sphenoid sinus.

It is scarcely the province of this paper to discuss in detail the various forms of surgical technique, but I have attempted to present the clinical conditions met with in the various forms of suppurative sinusitis, and to indicate the plan of treatment which the present concensus of opinion deems most logical and most effective.

Whether conservative or radical measures are adopted, the one surgical fundamental principle which underlies all of our operative work in the nasal fossae is that of free, liberal, and mechanically proper drainage.

If we can satisfactorily flush and drain the maxillary antrum through an alveolar puncture or by way of the anatomical nasal opening, many of our simple, uncomplicated empyemata of the maxillary antrum will be cured without more difficult technique; if we can readily find the sphenoid ostium and can secure an unobstructed drain either through the natural or artifically enlarged ostium, more difficult surgery may often be unnecessary; if we can cleanly remove the anterior portion of the middle turbinate without encroaching on the ethmoid bulla and without causing subsequent cicatrization of tissue about that natural drainage canal, the hiatus semilunaris, we will simplify the treatment of many of our cases of ethmoiditis; if the topography and anatomical relations of the naso-frontal duct to the turbinal areas remain fairly normal, many of our cases of frontal sinusitis will be amenable to treatment by the more conservative intra-nasal route than by the aggressive, radical and deforming external operation.

In conclusion, permit me to present, as the summary of some of our best authorities in this field and those who have had most experience with sinus work, that 80 per cent. of all sinus cases can be cured by the intra-nasal conservative route. With the tendency always present in every field of surgery to espouse radical measures wherever the occasion presents itself, I would emphasize the importance of giving the concluding statistics, just quoted careful attention; and would urge that our patients be given as much consideration as our surgical ambitions.

3858 Westminster Place.

OCULAR SIGNS AND COMPLICATIONS OF ACCESSORY SINUS DISEASE.*

BY JOHN GREEN, JR., M. D., ST. LOUIS.

It has been recognized for many years that certain gross abnormalities of the eye and orbit—for example, orbital abscess and atrophy of the optic nerve—might originate in suppurative inflammations and neoplasms of the accessory sinuses of the nose; but it is only within the past decade that ophthalmologists have come to appreciate the important role of sinus disease in many less obvious organic and functional ocular troubles. With a better understanding of the relationship between sinus and ocular disease, the conviction has been growing that certain ocular conditions of obscure etiology which, in the past, have been vaguely characterized as "idiopathic" or "rheumatic" can, in many instances, be traced to sinus trouble. In view of these relations, the question arises whether the separation of the specialties of ophthalmology and rhinology—a separation pretty generally accomplished in the larger centres of population—has been altogether a move in the right direction. At first thought, it might seem perfectly rational to insist on the association in the practice of a single individual of two regions standing in such intimate anatomic relationship as the eye and nose. But when we take into consideration the difference in the character of most of the problems that confront the rhinologist and ophthalmologist, demanding a high degree of technical skill of a widely different character, I believe we are justified in assuming that the greatest good will come from a separation of these specialties, provided the ophthalmologist constantly bears in mind that he is dealing, not merely with an eye that accidentally happens to be in the body, but with a human organism possessed of a nose and nasal sinuses; and, on the other hand, that the rhinologist does not forget that the orbit, the ocular muscles and the eyeball are within speaking distance of his sacred precincts.

I will first review briefly the more important ocular conditions associated with disease of the accessory sinuses and then allude to the ocular signs of sinus trouble which might lead one unskilled in rhinoscopic examination to suspect the existence of sinus disease. I am aware that various affections of the nose, as, for example, adenoids and certain forms of rhinitis may give rise to ocular signs similar to those

*Read before the St. Louis Medical Society, meeting of March 17, 1906.

of sinusitis, so that a diagnosis based solely on such signs can at best only be presumptive. However, as the determination of the existence of nasal disease is the important point, we should be satisfied to leave the determination of its precise character to the rhinologist.

Affections of the orbit. It is probable that the majority of inflammations of the orbit originate in a sinusitis. The clinical picture is the typical one of orbital phlegmon, with swelling of the lids, chemosis and exophthalmus. It is sometimes possible to determine the particular sinus involved by the direction in which the globe is displaced. Thus, downward and outward dislocation is often significant of disease of the frontal sinus. Dislocation of the globe without orbital inflammation may be occasioned by a chronic distension of the sinus walls. Variations in the degree of exophthalmus are rather characteristic and are to be explained, as pointed out by Posey, as a consequence of variations in the patulency of the sinus orifices.

Affections of the optic nerve. The optic nerve is especially prone to be implicated in sphenoiditis and posterior ethmoiditis, though the involvement is usually slight. If the sinus inflammation is prolonged and severe, a true retrobulbar inflammation of the nerve may develop. Tumors of the sphenoid do not ordinarily involve the optic nerve but may, exceptionally, cause progressive atrophy from pressure.

Affections of the extraocular muscles. Complete paralysis of all ocular muscles may, in rare instances, be traced to an apical cellulitis of the orbit, of sphenoidal or ethmoidal origin. Of much greater frequence are partial paralyses of a single muscle or group of muscles. Such pareses may occur in both suppurative and catarrhal conditions of the sinuses. They are to be explained as the result of participation by the muscle in the inflammation of the contiguous sinus or by reason of direct implication of the nerves as they enter the orbit.

Affections of the lachrymal apparatus. An empyaema of one of the sinuses may empty into the lachrymal sack. More frequently the pus discharges into the tissues surrounding the sack, there giving rise to the so-called prelachrymal abscess. Such cases very closely resemble true abscess of the sack by reason of the distension of the latter from closure of its openings. The differential diagnosis is established by the failure of the probe to release pus when passed into the sack.

Affections of the lids. A moderate edema of the lids, most marked in the morning and on bending forward is frequently associated with sinus disease. It is often unilateral, corresponding to the side of the affected sinus and is apt to be confined to the nasal half of the upper lid. Inflammation of the lid margin associated with chronic conjunctivitis is often observed in conjunction with sinusitis.

Affections of the cornea. Herpetic-like blisters of the cornea in consequence of implication of the fifth nerve as it passes along the

outer wall of the sphenoidal sinus have been recorded by Posey and Ellinger.

Affections of the choroid. Risley and Fish have described cases which seem to indicate that certain choroidal inflammations may originate from diseased sinuses. It has been suggested that sinusitis, by causing congestion and spasm of the ciliary muscle, might give rise to myopia. Such claims, as well as those which ascribe certain cataracts and glaucomas to sinus disease, can only be regarded as pleasant flights of the ophthalmo-rhinological imagination.

Not infrequently the first intimation of sinus trouble is indicated by symptoms referred to the eyes. St. Clair Thomson states: "Many cases present themselves in the first instance to the ophthalmologist, so much do the eye symptoms induced overshadow all others." It behooves the latter, therefore, to be on his guard lest he misinterpret symptoms of which some are scarcely to be distinguished from those of uncorrected ametropia or muscular imbalance. Many patients with sinus disease are, indeed, also the subjects of refractive anomalies in which case the symptoms are partly ocular in origin. However exact may be our correction of the optical error, it will not alone avail to free these patients of their disability. I am of the opinion that in such cases correction of the refraction should be deferred until the sinus trouble is well under control.

One fact that should always be borne in mind is that the ocular symptoms of sinusitis are characterized by marked variations in intensity. I have one day seen such a patient in the greatest misery with severe hemicrania, copious lachrymation and intense photophobia, accompanied by fever. The following day not a sign or symptom remained. This, I assume, is another indication of variation in the degree of patulency of the sinus openings.

A distinguishing feature of the headache of sinusitis is that it occurs in the morning. It may be a continuous pain with exacerbations or partake of the character of a neuralgia or hemicrania. The location of the pain is often significant of the sinus affected. With regard to the value of headache as a diagnostic sign and its frequency in nasal trouble, I agree with the statement of St. Clair Thomson that "the various forms of headache, hemicrania and neuralgia may be symptomatic of sinus affection and I am inclined to think that in adults nasal suppuration is only less frequent as a cause than errors of refraction."

A valuable sign of frontal and ethmoidal affection whether suppurative or catarrhal is the pain on pressure against the upper inner wall of the orbit, in the region of the pulley of the superior oblique. This area is often exquisitely sensitive, so much so that the slightest pressure will cause the patient to wince. Its value as a diagnostic sign is increased by the absence or at least the diminished pain on pres-

sure over the opposite fronto-ethmoidal region. In frontal sinusitis the skin at this site is often reddened and swollen.

In connection with other symptoms the presence of edema of the lid, of the character described above, may be of diagnostic significance. That this sign may be evoked by intranasal disease other than sinusitis, I have recently had exemplified in a case now under the care of Dr. H. W. Loeb and myself.

Asthenopia persisting after the correction of the refraction or muscular imbalance should not, as is often the case, be ascribed to neurasthenia or to the "inborn cussedness" of the individual, but should at once suggest a rhinoscopic examination. Your patient may declare positively that there is no nasal trouble, a statement which should not in the least swerve you from your purpose. In a certain proportion of cases, sinus disease will be revealed. The asthenopia appears to be due to accomodative weakness and insufficiency of the internal rectus. It is remarkable how quickly such patients regain ability to use the eyes on institution of appropriate nasal treatment.

A unilateral edema of the nerve of which the ophthalmoscopic signs are blurring of the papillary edge and dilatation of the retinal veins may be the sole sign of a posterior ethmoiditis or sphenoiditis. In such cases visual tests under diminished illumination will often determine a notable falling off in vision on the affected side. Perimetric examination may show central and paracentral relative scotomata or concentric contraction of the field.

In the presence of unilateral exophthalmus, nasal examination should always be made. The same procedure is advisable in choroidal troubles and opacities in the vitreous of which the cause is not obvious.

I believe that in some cases an association of significant ocular and other symptoms may be of even greater value in determining the presence of sinus trouble than a rhinoscopic examination.

DISCUSSION.

Dr. W. B. Shields:—We know that the majority of these cases are due to infection. Grunewalt said that of 99 cases of disease of the maxillary antrum which he examined, 73 were due to infections of the nose, only 14 could be traced to infection from decayed teeth. He also says that periostitis of the alveolar processes may produce antrum disease. Typhoid fever, syphilis and tuberculosis are the most common causes of the general diseases. Harke, of Wiesbaden, found that 6 out of 37 people dying of infectious diseases had disease of the antrum of Highmore and other nasal cavities. He also lays stress upon the dangers that may follow blowing the nose too hard, and in my estimation the using of sprays with too great force in influenza or other infections may produce disease of that kind. Another writer lays

stress upon the fact that syphilis is often an etiological factor and reports of syphilitic ethmoiditis in which he removed the sequestra and the patient got well. In one case I removed the sequestra after having removed the anterior end of the middle turbinate and the patient got well. I think chronic sphenoiditis is more common than was once supposed. I have seen three cases within the last two years. Dr. Myer, of New York, has reported a number of cases due to the introduction of the influenza bacillus, and other micro-organisms. The majority of cases of disease of the antrum of Highmore are due to a purulent ethmoiditis. Disease of the antrum in my opinion in the majority of cases is secondary to ethmoidal trouble. By the natural anatomical formation of the parts the pus gets into the antrum through the meatus. In the last year I had a case in which a tooth was the cause of extension into the ethmoidal cells, a suborbital abscess forming. An external opening was made, the ethmoidal cells curetted and after nine months of laborious and constant treatment the patient has recovered.

I do not think that atrophic rhinitis causes suppuration of the accessory cavities. Grunewalt has reported a number of cases of atrophic rhinitis on one side, nothing on the other side, and states that in every case there was a purulent discharge from some other sinus. Following his idea I have found that those cases I have seen were due to disease of some other sinus. Adenoids also may cause disease of other cavities, especially the sphenoidal.

Dr. J. E. Jennings:—On account of the very close relationship of the eye to the nose, eye symptoms may be the first to make their appearance. Two classes of sinus cases present these symptoms; first, a large number where there are no nasal signs. Perhaps there may be headache, dull pain or neuralgia which the patient refers to the eye and consults the eye specialist. The oculist hears of this pain in the head and as it is a common symptom of disease of the eye he will look over the refraction and muscle balance. It is a good rule to follow that if these patients do not improve in a week or two we should examine into the condition of the sinus. In the second class of cases, where there is a considerable amount of pent up pus very striking eye symptoms may be observed as exophthalmus, atrophy of the optic nerve, etc.

Dr. J. C. Buckwalter:—The question arises, how do the sinuses become infected? I am of the opinion that the micro-organisms are always present in the sinus. Given an acute rhinitis the ostium of the sinuses is usually closed, the air in the sinuses becomes rarefied, there follows increased circulation in the mucous membrane, lmyph is thrown out, forming a medium for the growth of bacteria.

Dr. F. L. Henderson:—It has taken the general practitioner many years to appreciate the fact that headaches are dependent upon ocular

conditions, and it has taken too long for the oculist and the general practitioner to appreciate the fact that many of these headaches are due to sinus trouble. I know of no article that has been of more value to me than the contribution by Dr. Ewing and Dr. Sluder as to the dependence of headaches upon sinus disease, read several years ago before the American Ophthalmological Society. In this connection I would like to cite one case in my own experience. Last summer a man came to me with a history of continuous headache covering seven years. He told me that if he did not soon get some relief he would not be responsible for the consequences. The history revealed the fact that he had been under the care of an oculist during the whole period, two years under one, three years under anothr and the last two years under a third, all men of the highest standing and men in whom I have the greatest confidence, so I told him I felt convinced the trouble did not lie in his eyes at all. I said if at the end of a week I could not locate the trouble I would discharge him. After testing his refraction I gave him a prescription to change his glasses. He got no relief, and after questioning him I made up my mind he had a sinusitis. I gave him a letter to Dr. Sluder and last week Dr. Sluder informed me that our friend had not had a headache for three months.

I do not want to reflect on the gentlemen who had this case, for I am convinced that many cases I have had and did not cure, might have been cured had I sent the patients to the rhinologist. However, I believe the general practitioner should always send these headache cases to the eye man first.

Dr. Charles Shattinger:—I wish to ask one or all of the gentlemen about one point that has not been made quite clear, i. e., as to the diagnosis and the influence of this disease in producing headaches when there is no pus present. I would like to know how best to recognize these cases and what sort of symptoms would be likely to be produced aside from the headaches, for in this class of patients it would be most difficult to differentiate whether the condition is due to sinus disease or to ocular trouble.

Dr. Shields:—I do not like to take issue with so many but in regard to the pain in sinus disease it has been conclusively shown that it is not due to the rarefaction of the air but is caused by the increased pressure due to the putrifactive gases generated by pus, and retention of these gases. A patient suffering from a chronic inflammation of the frontal sinus does not suffer while in a prone position, but upon arising the pus drops into the infundibulum. If you let the pus out the gas escapes and the pain disappears.

Dr. John Green, Jr., in closing:—Some years ago I had under my care a man, 18 years of age, who complained of headache, inability to use the eyes and other symptoms that might be ascribed to refractive

or muscular error. I made a careful estimation of the refraction and prescribed glasses. The patient's condition improved somewhat but from time to time he would have very acute headaches, and for periods of days together he would be entirely miserable, apparently worse off than before he consulted me. I saw him during one of these attacks and found tenderness on pressure over the pulley of the superior oblique and concluded he was suffering from nasal trouble. Dr. Sauer found swollen turbinates and purulent ethmoiditis. He removed the middle turbinate, instituted drainage and complete relief followed. Since then the patient has had absolutely no headache and has discarded his glasses. Another case: A young woman of twenty-two, with moderate hyperopia, had been under my care for a number of years, with recurrent headaches and various signs of asthenopia. I never could find any tenderness over the fronto-ethmoidal region but other signs led me to suspect nasal trouble. Dr. Sauer found hypertrophy of both middle turbinates and large adenoids. This was not a case of sinus disease but it had produced the typical ocular symptoms. The correction of the nasal trouble was followed by complete relief from the headaches. She had no return.

Dr. Goldstein, in closing.—In opening the ethmoid cells the danger of operative technic can be eliminated by discarding the sharp curette, except in breaking down the thin, friable tissue of the interethmoidal cells, the operation continued with small rongeur forceps, working outward and avoiding the ethmoid plate. As to the possibility of encroaching upon the orbit, the rational procedure is to remove enough of the inferior lower turbinate to give a free field for operation. With the turbinate out of the way and the field clear the nasal wall of the antrum can be more easily attacked and the technique is a simple affair. The external operation referred to as the Caldwell-Luc operation on the antrum has been generally discarded for it includes an opening of the external wall above the alveolar process and the opening of the nasal wall of the antrum. The same results may be effected, and the same ability to reach every portion of the interior of the antrum may be found in the removal of the nasal wall of the antrum, and that today is the operation of preference when a more radical encroachment into the antrum is indicated.

The majority of cases of sinusitis are inammatory and suppurative. Infrequently there are cases of sinusitis that are the result of neoplasms filling the sinus, or the encroachment of the tissues of the nares. The first is usually diagnosed by the pressure symptoms and the peculiar location of the pain. The encroachment of the tissues of the nose may easily be determined on nasal inspection.

A chronic sinusitis of the antrum that does not yield to treatment by its natural drainage and vent through the alveolar process, or through the nose, is evidently of such a pathological nature that more

radical operation is necessary. I would then think there was a thickened mucosa that would go on indefinitely. It is in just these cases that I would urge radical operation. Coakley urges this in the frontal sinus. In his radical operation, entering the frontal sinus from above, he leaves no vestige of mucosa in the area, and he claims that every bit of it must be stripped away to obtain an absolute cure.

As to the diagnosis, I would call attention to one point and that is the publication this month of a paper by Dr. Mosher, of Boston. He has done some brilliant work in the use of the x-ray. He presents the work of many months, giving the pictures of his x-ray work on the sinus. These are perhaps more definite for diagnostic work than the transillumination method.

Dr. Ewing, in closing:—Dr. Shields has taken issue with me on the question of atrophic rhinitis as a cause of sinusitis. I did not mean to say that it necessarily caused an acute active suppuration but, in the case of so radical a process as atrophic rhinitis, it seems natural that it should extend and infect the antrum of Highmore, producing a form of inflammation. Dr. Shields mentioned that the teeth caused fourteen per cent of the cases. I stated in my paper that the teeth were the most common cause. He quoted statistics showing that out of 99 cases 14 were due to the teeth. The rest, I judge, would include all other causes; thus, my experience would seem to stand even on his figures. He believes that the ethmoid is almost always the cause of antrum disease. I do not. He also declares that the antrum is not the most common of the sinuses affected. I simply spoke from my own experience.

I confess to some prejudice against suppurating necrosing ethmoiditis. It has been said that we get from Europe in culture only what we take there. This may apply to ethmoiditis. I did not take ethmoiditis with me, and I did not find very much of it there. When I was in the London Throat Hospital Woakes was including necrosing ethmoiditis in everything. This sensation of dead bone, so appreciable to him, was not discoverable to his colleagues and students. Their failure he prescribed to lack of tactile sensibility. Here is the trouble with many physicians, and particularly specialists. They are too much inclined to accentuate little things. They get an idea and think it divine, then push it to the point of iniquity. To them desire leads the newly formed idea out of its swaddling clothes into full-fledged truth.

Now, I wish to state most candidly that these remarks are intended in now way to reflect on Dr. Shields. I only want to confess my prejudice against the assertion that suppurating or necrosing ethmoiditis is anything like as common as antrum or frontal sinusitis. I frequently encounter acute inflammation in both the frontal and maxillary sinuses and chronic inflammation in the latter. The others I find infrequently diseased.

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EDITORIAL.

INCREASING OUR MEMBERSHIP.

An opportunity which we feel will bear important results for the welfare of the association by increasing our membership has been presented and we hope every member will realize that this increase depends upon co-operation, for under no other conditions could the desired growth be attained.

At a recent meeting of the executive committee, the president and secretary present, arrangements were completed with the secretary of the American Medical Association which will place a number of experienced men under the direction of the officers of the state association for the purpose of canvassing the state by counties in a systematic effort to increase the membership of existing societies and to organize new societies in those counties now in affiliation. The canvassers will visit each councillor district, working under the direction of the councillors, call upon every physican who is eligible for membership and assist the councillor in organizing new societies. In counties now organized they will work with the councillor and the officers and members of the county societies in an effort to bring in every reputable physician in the county.

Heretofore we have depended upon the councillors alone. They have labored faithfully and with great energy and have been materially assisted by the state secretary in the work of forming new county societies, with the result that out of the one hundred and fifteen counties in the state ninety-nine are organized. The remaining sixteen should be brought into affiliation and it can be done now. To do this we would have every member at once manifest a spirit of enthusiasm and agitate the benefits, privileges and necessities of organi-

zation until every reputable physician in every county has joined the association.

Each member has a duty to perform and it should be a pleasant duty. Let each one then seek a non-member and impress upon him the importance of joining the association. No good man should remain outside the representative medical society in his district. Membership in the county medical society is a duty he owes to himself, to his profession and to society.

GOOD WORK.

At a recent meeting of the Cass County Medical Society the county representative in the state legislature was the guest of the evening. By invitation of the society he attended the meeting and addressed the members on the subject of medical legislation pointing out the best methods of securing the passage of bills introduced by the profession, and promising his support to such measures.

This must have been a particularly interesting meeting for the members in Cass county. Just now when we are endeavoring to secure needed legislation, every avenue should be utilized through which influence can be brought to bear upon members of the legislature. We would like to see every county society devote a meeting to a similar purpose. Invite the candidates for representatives from your county to attend your meetings and ask them to join you in your effort to secure the passage of bills to be introduced. Explain to them the necessity for such legislation as a new medical practice act, a law to make criminal abortion a felony, a pure food law that will protect an unthinking and ignorant public from swallowing poisonous nostrums without a knowledge of their contents, and other measures to be introduced looking to improvement in our medical and sanitary laws.

STATE SANITARIUM FOR INCIPIENT TUBERCULOSIS.

On August 15th last the corner stone of the new sanitarium for the treatment of incipient tuberculosis was laid. More than 500 physicians from all parts of the state were present. Governor Folk delivered a characteristic address and said that one of the pleasantest duties he had to perform was to sign the bill providing for this institution. Dr. William Porter, of St. Louis, also addressed the assembly. He quoted figures showing the annual economic loss to the state at the present death rate from tuberculosis and the saving which will be effected when the sanitarium is in full operation. He estimated that at present there are 20,000 cases of tuberculosis in Missouri, entailing a loss of $24,000,000 annually. Forty per cent. of these cases can be saved. This means a saving of $9,000,000 annually to the state.

But untold good will be done by restoring to health some who were marked for the grave and by educating the people to protect themselves from infection. Missouri must not permit this institution to fail in its mission and the legislature should appropriate a liberal sum of money for maintaining the work now about to begin.

HOME FOR THE ST. LOUIS MEDICAL SOCIETY.

On September 15th, the St. Louis Medical Society will dedicate and occupy its new building adjoining the St. Louis Medical Library Association building.

For almost seventy years the St. Louis Medical Society has existed without a home of its own. For many years meetings were held in the rooms of the Board of Education, but new quarters in a more convenient location in the central part of the city stimulated a greater attendance and excited more interest in the work of the society. The convenience of the new quarters greatly exceeded their adaptability and therefore rooms were secured in the Medical Library Association building. It soon become evident that these small, unsuitable rooms were inadequate to accommodate the attendance, and the society convinced that it was large enough, and old enough, and powerful enough to own its own home, decided to erect a building of its own.

The building is constructed in amphitheater form, with comfortable seats arranged in circular rows, centering on the presiding officer's rostrum. It is well lighted and handsomely furnished with adequate facilities for ventilating and heating. It has a seating capacity of 175 which can be doubled, if necessary, for special occasions.

For the last ten years the society has shown evidences of new life, but its prospects have never been brighter than at present. The membership is increasing at an unprecedented rate; the character of the scientific work of its members is on a constantly rising plane; enthusiasm, vigor and optimism prevail and the members are working disinterestedly for the good of the whole society.

Under the influence of the new home, with a larger membership, with earnest work and complete harmony, the present happy condition is but an index of what we may expect from the St. Louis Medical Society.

The program committee has on hand scientific material for eight of the fifteen remaining meetings in this year and it promises the members a series of snappy meetings with papers and discussions of a high order. J. C. M.

ST. LOUIS MEDICAL JOURNALS COMBINE.

The *St. Louis Medical and Surgical Journal* has combined with the *Medical Mirror*. This merger removes the oldest monthly medical

journal from the field. It was established in 1843 and for many years held high rank among the medical journals of this country. It was edited at different times by some of the most brilliant men in the local profession. Dr. Dumesnil, it is stated, will have an interest in the *Medical Mirror*.

The first number of the *West Virginia Medical Journal* has appeared, adding one more to the number of state associations which publish their transactions in journal form.

We are pleased with the appearance of this new publication and extend our warm congratulations and best wishes for a long, successful and useful life. For the first year it will be published bi-monthly. Commencing with July, 1907, it will be published monthly.

MEDICAL ASSOCIATION OF THE SOUTHWEST.

When the State Associations of Missouri, Texas, Kansas, Arkansas, Oklahoma and Indian Territory met this summer, each one endorsed a movement looking toward the consummation of the idea expressed at a late meeting of the American Medical Association, which was to divide the United States into groups or districts and organize in each a district association which would stand in the relation of an ally to the A. M. A. Each state appointed a committee of five to act on this committee. Monday, July 16th, at 10 a. m., the committee met in parlor S. Midland Hotel, Kansas City, and organized by electing Dr. F. J. Lutz, of St. Louis, temporary chairman, and Dr. F. H. Clark, of El Reno, Okla., temporary secretary. A lengthy discussion regarding the necessity for such an organization was taken part in by every one present.

The following members were present: Drs. J. E. Gilcreest, Gainesville, Tex.; T. E. Holland, Hot Springs, Ark.; J. A. Lightfoot, Texarkana, Ark.; J. B. Bolton, Eureka Springs, Ark.; C. E. Bowers, Wichita, Kas.; Geo. M. Gray, Kansas City, Kas.; M. F. Jarrett, Fort Scott, Kas.; H. L. Alkire, Topeka, Kas.; Frank J. Lutz, St. Louis, Mo.; Chas. Wood Fassett, St. Joseph, Mo.; Jabez N. Jackson, Kansas City, Mo.; B. F. Fortner, Vinita, Ind. Ter.; A. L. Blesh, Guthrie, Okla.; and F. H. Clark, El Reno, Okla.

A large amount of routine business was attended to, the name chosen being "The Medical Association of the Southwest." The meeting is to be an annual one, to be held in the fall, and the initial meeting at Oklahoma City early in October. The exact date is to be fixed as soon as possible. The Committee on Constitution, which consists of Drs. Jackson, Bowers, Gilcreest, Lightfoot and Blesh, were instructed to draw up declaration of principles to be presented to the committee and a constitution to be presented to the general meeting of the association. The following is the declaration:

To the Medical Profession of the Southwest:

By virtue of the authority delegated to us by our several state associations, to consider the advisability of the organization of a medical association of the Southwest and to define its purpose, scope and sphere of action, we your committee, in pursuance of such instruction, this day met, and beg leave to submit the following conclusions: that the time is now opportune for the formation of a medical association of the Southwest, and respectfully urge that in consideration of the fact that in the territory comprised by the states of Missouri, Kansas, Arkansas, Oklahoma, Indian Territory and Texas are engaged in the active practice of the profession of medicine, between 15,000 and 20,000 of as bright and intelligent physicians as can be found anywhere; who, because of the natural limitations of the state association on the one hand and the magnitude of the American Medical Association on the other, lack the proper opportunity for the full development of their powers, that the formation of an association of the above mentioned states will materially aid in developing this latent talent, and thus advance the standard of scientific medicine in the whole Nation.

We believe that the membership of this association should be limited to those members of the profession who are in good standing in their respective state associations.

We believe that an association of this kind will satisfactorily fill the present existing hiatus between the state association on the one hand and the A. M. A. on the other, occupying a field peculiarly its own, adding increased effectiveness to the work of the one and at the same time training talent to adorn the other.

We would respectfully call the attention of the profession of the great Southwest to the fact that this step is in harmony wih the idea expressed at the late meeting of the A. M. A., and in its constitution (Sec. 7) of dividing the United States into districts, so as to make its work more effective and more truly representative of the whole body of the profession of the United States.

We would especially call the attention of the profession to the fact that this association is not to be organized in opposition to, but rather in harmony with all existing regular associations.

We recommend that the name of this organization be The Medical Association of the Southwest.

We invite the careful consideration of the medical profession of the states above mentioned, to the reasons given herein, and if they meet with their approval, extend a cordial invitation to them to join with us in making this, as it of right should be, one of the strongest working medical bodies in the United States.

A. L. Blesh,
Jabez N. Jackson,
J. A. Lightfoot,
J. E. Gilcreest,
C. E. Bowers,
Committee.

After the adoption of the Declaration of Principles, which was unanimous, the committee completed the temporary organization by electing Drs. J. T. Wilson, Sherman, Tex.; Marion King, Texarkana, Ark.; P. S. Mitchell, Iola, Kas., and C. S. Bobo, Norman, Okla., temporary vice-president, and Dr. H. C. Todd, Oklahoma City, chairman of Committee of Arrangements.

A committee on program was appointed, consisting of Drs. J. E. Gilcreest, H. K. Alkire, J. D. Bolton, F. J. Lutz and F. H. Clark.

The program committee was instructed to provide a program for two days, and to divide the work into sections. Dr. H. L. Alkire, chairman of the Section on Eye, Ear, Nose and Throat; Dr. J. E. Gilcreest on Surgery, and Dr. J. D. Bolton on General Medicine.

A Committee on Publication was appointed as follows: Dr. Chas. Wood Fassett, St. Joseph; Dr. T. E. Holland, Hot Springs; Dr. M. F. Jarrett, Fort Scott; Dr. M. M. Smith, Austin; Dr. A. L. Blesh, Guthrie. This committee will make a report at the first meeting, and a recommendation as to the best method of publishing the transactions of the association.

The secretary was instructed to send a copy of the Declaration of Principles to every physician eligible to membership in the states comprising this district, and to urge them to attend the initial meeting.

A rising vote of thanks was tendered Dr. Jabez N. Jackson for his efforts in behalf of the new organization and for his generous entertainment of the committee, after which the committee adjourned to meet on the evening preceding the first meeting of the association at Oklahoma City.

F. H. Clark, Secretary-Treasurer.

The nineteenth annual meeting of the Medical Society of the Missouri Valley will be held in Council Bluffs, Iowa, Thursday and Friday, September 6 and 7. The sessions in Council Bluffs, the birthplace of the society, are always highly successful, scientifically and socially. Special railroad rates will be in effect within a radius of 100 miles of Council Bluffs.

COUNTY SOCIETY NOTES

CHARITON COUNTY MEDICAL SOCIETY.

Chariton County Medical Society met at Brunswick on July 26th. On motion the resolution presented by Dr. Pearse at the last meeting of the state association and adopted by the association was adopted by this society. The secretary was instructed to furnish a roster of the membership to the prominent newspapers in the county for publication. Dr. Wallace reported a case of intussusception and described the operation as performed in a New York hospital. This description and report of the case was very interesting and instructive.

Dr. Hawkins reported a case of incontinence of urine existing for three years in a child seven years old. The subject of cholera infantum was discussed, Dr. J. H. P. Baker opening the discussion.

Dr. Austin reported the action taken by the committee on legislation and public health at the meeting held in St. Louis.

W. L. Baker, M. D. Reporter.

CLINTON COUNTY MEDICAL SOCIETY.

The Clinton County Medical Society met in Plattsburg, August 7, with a fair atttendance of the members. This was an open meeting and a number of clergymen were present. Dr. John Sturgis read a paper on "The Abortionist."

Dr. John Kay read a paper upon the same subject with special reference to its historical and legal aspects. Both papers were freely discussed by all present.

Adjourned to meet in Plattsburg, September 4.

E. W. Colley, M. D., Secretary.

DAVIESS COUNTY MEDICAL SOCIETY.

Daviess County Medical Society met in Gallatin, Tuesday, August 14.

Dr. H. E. Songer read a very interesting paper entitled "Whither are we Drifting in Therapeutics?" This brought out a very liberal discussion from every one present.

The remainder of the time was taken up in reports of interesting cases.

The next meeting will be held on the second Tuesday in November.

H. E. Songer, M. D., Reporter.

DEKALB COUNTY MEDICAL SOCIETY.

The first meeting of DeKalb County Medical Society was held at Maysville under the supervision of the district councillor, Dr. W. E. McKinley, and proceeded to organize the county medical society. The following officers were elected: President, Dr. H. P. Yeater; vice-president, Dr. J. C. Guinn; secretary and treasurer, Dr. R. A. Evans. Drs. G. W. Whitely and J. W. Conard of Gentry County Medical Society were also present and assisted in the organization of the society.

Dr. McKinley and Dr. Whitely addressed the meeting and earnestly set forth the benefits and privileges as well as the necessity for organized effort on the part of physicians. The meeting was a very enthusiastic one and DeKalb County Medical Society promises to be one of the best working bodies in the association.

R. A. Evans, M. D., Secretary.

GENTRY COUNTY MEDICAL SOCIETY.

Gentry County Medical Society met in the office of Dr. P. W. Smith at Albany on August 14th and spent a profitable two hours listening to the reading of a paper on "Entero-Colitis" by Dr. J. W. Conard and a paper by G. W. Whitely on "Typhlitis and Perityphlitis, and their Relation to Appendicitis with the Therapeutic Indications." A general discussion followed the reading of these papers.

Interest in the society is constantly growing and at this meeting each member promised to redouble his efforts to bring in as many new members as possible and to urge better attendance at the meetings.

The next meeting will be held at Darlington in the office of J. L. Burgess.

G. W. Whitely, M. D., Reporter.

HOLT COUNTY MEDICAL SOCIETY.

Holt County Medical Society met at Forest City, July 12th. Dr. Proud read a paper on infant foods and infant feeding. Dr. J. M. Davis read a paper on atypical forms of typhoid fever with particular reference to unusual conditions met with in the Missouri River bottom.

The names of Dr. Hogan and Dr. Minton were added to the committee appointed to arrange for a special meeting at Big Lake sometime in September. The secretary will notify all members of the date of this meeting when arrangements are completed.

J. F. Chander, M. D., Secretary.

HOWARD COUNTY MEDICAL SOCIETY.

Howard County Medical Society met in the office of the secretary at Fayette on August 3rd. Dr. Paul C. Smith presented a very inter-

esting case of anasarca presumably the result of heart disease and aortic aneurism. Dr. Smith also reported a case of entero-colitis in a child one year old.

The committee appointed to draft resolutions on the death of Dr. Edwin C. Heller, of Harrisburg, reported as follows:

Resolved, that while we bow submissively to the Divine will we feel that in the death of Dr. Edwin C. Heller we have lost a personal friend and that Boone and Howard counties have lost an eminent physician and surgeon.

Dr. Edwin C. Heller was born at Wytheville, Va., in 1844. He was educated in Virginia and graduated at the Virginia Medical College at Richmond, Va., in 1859. His Missouri State certificate bears date of March, 1870. He had been engaged in practice in Virginia, Kansas City, Fayette and Harrisburg, Mo.

C. W. Watts, M. D., Reporter.

LINN COUNTY MEDICAL SOCIETY

The July meeting was held in Marceline on July 10th. Dr. C. D. Stratton read a paper on dysentery.

Drs. J. H. Perrin and A. W. Knott of Marceline were elected to membership. The following amendments to the by-laws were read and held over for the next meeting:

"Resolved, that Article 5, Section 1 of constitution be changed to read bi-monthly instead of quarterly and at such place as members may choose.

"Also that Section 11 be changed to read on 'Friday nearest the full moon in January, March, May, July, September and November.'"

The following members were appointed to read papers at the next meeting: Dr. E. D. Standly of Linneus, subject, "Typhoid Fever"; Dr. J. H. Perrin of Marceline, subject, "Cerebro Spinal Meningitis;" Dr. A. C. Pettijohn of Brookfield, subject, "Value of Medical Legislation."

F. W. Burke, M. D., Secretary.

NEW MADRID COUNTY MEDICAL SOCIETY.

New Madrid County Medical Society met in regular session Thursday, August 2nd, at New Madrid. Dr. O'Bannon reported a case of eclampsia with fatal result to the mother. Dr. Timberman reported a case of dead fetus delivered with the membranes intact. Dr. Sparhawk reported a case of threatened abortion. These cases were freely discussed by the members.

Dr. Sparhawk read a paper on "Hernia."

The next meeting of the society will be held at Marston, October 4th.

W. J. Sparhawk, M. D., Reporter.

BOOK REVIEWS

THE PSYCHIC TREATMENT OF NERVOUS DISORDERS. By Dr. Paul DuBois, Professor of Neuropathology, University of Berne. Translated by Smith Ely Jelliffe, M. D., Ph. D., and William A. White, M. D. 8vo., cloth; 471 pages. Price $3.00 net. Funk & Wagnalls Company: New York and London. 1906.

This English translation by Jelliffe and White of DuBois' well-known book deserves to receive in this country the same degree of popularity it met with in France. It is a book that many have been waiting for. It presents in detail the methods of one of the most skillful advocates of what may be termed mental therapeutics. The book consists of a psychological introduction, written in a simple and easily understood manner, upon which the author is supposed to base his psychotherapy. This introduction is interesting, not on this account, but because it is so pleasingly written, and because it contains so much evidence that the author regards his psychology as a thing lying close to the every-day working plan of a neurologist. Of course it is easily seen that, even with all the author's attempts at explanation objectively, the fact is impressed more and more upon the reader that, in the main, the author has been successful in his treatment, not because his methods are based upon a correct appreciation of the psychology of the thing, but because his personality contains within itself just those elements which make his patients want to do as he says, and forces them to see their cases in the light he wishes them to do. This book is recommended to all neurologists, as well as to those who have any sort of interest in the more advanced methods in use in neurological therapeutics. Especially should those read this book who still believe in the force of mystery, in the terrors of the large spark, and in the buzz of the static machine. To such, the truth and frankness of this book will appeal as an interesting variation to the self-deception which a long use of their methods produces.

MODERN CLINICAL MEDICINE. VOL. I. INFECTIOUS DISEASES. VOL. II. DISEASES OF METABOLISM AND OF THE BLOOD, ANIMAL PARASITES. Translated from "Die Deutsche Klinik" by Julius L. Salinger, M. D. New York and London: D. Appleton & Co. 1906.

It was inevitable that the excellent series of monographs by German scientists and clinicians, published under the title of "Die Deutsche Klinik," should be promptly translated. These treatises, written by men who are absolutely the masters, each in his field, form to-day the best presentation of their respective subjects. Among the contributors to these two volumes we see: Klemperer, Liobermeister,

Ortner, Loffler, Heubner, J. C. Wilson of Philadelphia, Eichorst, v. Noorden, Naunyn, Gerhardt, W. Ebstein, Ewald, Benda, P. Ehrlich, Grawitz, v. Leube, Senator, Litten and v. Jaksch—truly a brilliant galaxy. These books should be on the shelves of every progressive physician who cannot avail himself of the German original. The reader will extract much amusement from the article on blood examination by Lazarus. The editor of the second volume, R. C. Cabot, is himself an authority in this field and has frequently interpolated in brackets his own views, often diametrically opposed to those of the essayist. The result is sometimes rather ludicrous.

The Clinical Study of Blood Pressure. A Guide to the Use of the Sphygmomanometer. By Theodore C. Janeway, M. D. New York and London: D. Appleton & Company.

A knowledge of blood pressure in various diseases seems now to be of the greatest importance. Inasmuch as the procedure is a comparatively new one to the clinician, and depends upon careful technique, such a work as this was greatly needed.

It is divided into three parts, viz., the physiological, technical and clinical.

A careful perusal of the volume will enable one to conduct the work with entire satisfaction. The various sphygmomanometers are described and criticised, and the technique of their application minutely detailed.

Prophylaxis and Treatment of Internal Diseases. By Frederick Forchheimer, M. D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio, University of Cincinnati, Cincinnati, Ohio. Cloth. Price $5.00 net. D. Appleton & Co., Publishers. New York.

This is an eminently practical work, one which concerns itself diligently with the business in hand. It first lays down broad principles, then details the special applications of them, where possible; feeling that, it indicates the proper direction for their application.

It is essentially a work of breadth. It is also essentially a work of experience. Free from dogmatism, there is the calm assurance of one to whom the path is familiar. In these days of therapeutic pessimism, it is refreshing to find a practical physican to whom the making of a correct diagnosis is but the beginning rather than the end of his craft.

Dr. Forchheimer undertook a difficult task, but he has given us a most excellent work,—one that should have a large sale to the general practitioner—a book which has long been in demand.

ECZEMA. A CONSIDERATION OF ITS COURSE, DIAGNOSIS AND TREATMENT. By Samuel Horton Brown, M. D. Assistant Dermatologist, Philadelphia Hospital, etc., etc. Philadelphia. P. Blakiston's Son & Co. 1906. $1.00.

The common knowledge regarding eczema is presented in this little volume in a form which renders the study of the disease more convenient than is usually done by the larger textbooks. The fact that all statements are made by the author in a dogmatic and positive manner will be appreciated by the practitioner who consults these pages and he will find explicit directions for the care of his cases.

NEW PUBLICATIONS ANNOUNCED.

Messrs. W. B. Saunders Company announce for publication in the early fall the following excellent and practical works:

Keen's Surgery: Its Principles and Practice (Volume I).
Sobotta and McMurrich's Human Anatomy (Volume III).
Webster's Text-Book of Gynecology.
Hill's Histology and Organography.
McConnell's Pathology.
Morrow's Immediate Care of the Injured.
Stevenson's Photoscopy (Retinoscopy and Skiascopy).
Preiswerk and Warren's Atlas of Dentistry.
Goepp's State Board Questions and Answers.
Lusk's Elements of Nutrition.

The most notable announcement is the new work on Surgery, edited by Dr. W. W. Keen, complete in five octavo volumes, and containing over 1,500 original illustrations. The entire work is written by the leaders of modern surgery—men whose names are inseparably associated with the subjects upon which they have written.

POKER JIM, GENTLEMAN, by Dr. G. Frank Lydston, is announced for early appearance. (The Monarch Book Company, Chicago).

This is a story of the old time Californian mining camps by a native son of the Golden West. It depicts the oddities and heroism of the early western pioneers and brings out in bold relief the many-sidedness of their characters. The delineation of these characters is a labor of love on the part of the author, who recalls them from his boyhood's days, and as the most picturesque features of his early life.

County Societies in Affiliation with the State Medical Association

County.	President	Address of President.	Secretary	Address of Secy.
Adair	James Hanks	Brashear	E. C. Grim	Kirksville
Andrew	D. B. Bryant	Savannah	C. O. Jeffries	Savannah
Atchison	W. G. Stafford	Tarkio	A. McMichael	Rockport.
Audrain	C. A. Rothwell	Mexico	E. S. Cave	Mexico.
Barry	Wm. M. West	Monett	D. L. Mitchell	Cassville
Barton	G. D. Allee	Lamar	J. L. McComb	Lamar.
Bates	J. R. Coulson	Spruce	E. N. Chastain	Rich Hill.
Benton	G. S. Greeson	Lincoln	S. O. Davis	Warsaw.
Boone	I. E. Thornton	Columbia	W. A. Norris	Columbia.
Buchanan	P. I. Leonard	St. Joseph	Chas. W. Fassett	St. Joseph.
Butler	J. J. Norwine	Poplar Bluff	Ira W. Seybold	Poplar Bluff.
Caldwell	R. K. Dodge	Palo	Tinsley Brown	Hamilton.
Callaway	J. F. Harrison	Fulton	Martin Yates	Fulton.
Camden	G. M. Moore	Linn Creek	G. T. Myers	Macks Creek.
Cape Girardeau	H. L. Cunningham	Cape Girardeau	T. D. Porterfield, Jr.	Cape Girardeau.
Carroll	W. C. Baird	Bogard	R. F. Cook	Carrollton,
Carter-Shannon	F. Hyde	Eminence	J. A. Chilton	Van Buren.
Cass	G. W. Farrow	East Lynne	W. F. Chaffin	Raymore.
Cedar	Kimball Hill	El Dorado Springs	J. W. Dawson	El Dorado Springs.
Chariton	J. R. Gaines	Mussel Fork	C. A. Jennings	Salisbury.
Clark	H. W. Harris	Winchester	A. C. Bridges	Kahoka.
Clay	L. J. Jones	Linden	F. H. Matthews	Liberty.
Clinton	John Sturgis	Perrin	E. A. Colley	Plattsburg.
Cole	G. Ettmueller	Jefferson City	A. W. McAlester	Jefferson City.
Cooper	O. W. Cochran	Gooch Mill	J. R. Lionberger	Boonville.
Crawford	W. A. Metcalf	Steelville	A. H. Horn	Steelville.
Daviess	W. L. Brosius	Gallatin	M. A. Smith	Gallatin.
Dent	A. F. McMurtrey	Salem	J. C. Welch	Salem.
Dunklin	N. F. Kelley	Kennett	G. L. Johnson	Kennett.
Franklin	H. A. Booth	Pacific	A. C. Brown	Moselle.
Gasconade-Marie Osage	J. J. Ferrell	Owensville	J. W. Nieweg	Lois.
Gentry	G. W. Whiteley	Albany	J. N. Conrad	Albany.
Greene	G. W. Barnes	Springfield	Robt. M. Cowan	Springfield.
Grundy	N. E. Sutton	Trenton	W. H. Winningham	Trenton.
Harrison	A. H. Vandivert	Bethany	W. H. Wiley	Ridgeway.
Henry	W. H. Benway	Deepwater	F. M. Douglass	Clinton.
Holt	C. L. Evans	Oregon	J. F. Chandler	Forest City.
Howard	V. O. Bonham	New Franklin	C. W. Watts	Fayette.
Howell	A. H. Thompson	Lanton	A. H. Thornburgh	West Plains.
Iron	R. W. Gay	Ironton	Ira A. Marshall	Ironton.
Jackson	Robt. T. Sloan	Kansas City	Max Goldman	Kansas City.
Jasper	J. D. Pifer	Joplin	R. M. James	Joplin.
Jefferson	J. W. Pickel	Crystal City	C. G. Harris	Festus.
Johnson	W. H. Farrar	Warrensburg	E. H. Gilbert	Warrensburg.
Knox	L. S. Brown	Edina	Henry J. Jurgen	Edina.
Laclede	J. C. Jacobs	Conway	P. L. Pritchett	Lebanon.
Lafayette	P. S. Fulkerson	Lexington	C. T. Ryland	Lexington.
Lawrence	J. A. Harris	Mt. Vernon	C. A. Moore	Aurora
Lincoln	S. R. McKay	Troy	Wm. P. Smith	Troy.
Linn	J. W. Mason	Brookfield	Foster Burke	Laclede.
Livingston	L. E. Tracy	Chillicothe	J. F. Cherrington	Chillicothe.
McDonald	E. F. Doty	Anderson	M. L. Sellers	Anderson.
Macon	W. H. Miller	Macon	C. W. Reagan	Macon.
Madison	C. A. Anthony	Fredericktown	S. C. Slaughter	Fredericktown.
Marion	Richard Schmidt	Hannibal	H. L. Banks	Hannibal.
Mercer	H. P. Chesmore	Princeton	C. R. Buren	Princeton.
Miller	S. P. Hickman	Ulman	J. L. Gilleland	Olean.
Mississippi	G. R. Wallace	Bertrand	R. K. Ogilvie	Charleston.
Moniteau	J. M. Robertson	Latham	W. R. Patterson	Tipton.
Monroe	S. M. Brown	Monroe City	M. C. McMurry	Paris.
Morgan	W. L. Hatler	Barnett	J. T. Beale	Versailles.
New Madrid	Welton O'Bannon	New Madrid	C. W. Watson	New Madrid.
Newton	R. L. Wills	Neosho	Horace Bowers	Neosho.
Nodaway	F. R. Anthony	Maryville	H. L. Sayler	Elmo.
Pemiscot	J. G. Luten	Caruthersville	John Johnson	Hayti.
Perry	T. M. Hudson	Perryville	F. M. Vessells	Perryville.
Pettis	W. C. Overstreet	Sedalia	W. J. Ferguson	Sedalia.
Phelps	W. H. Bruer	St. James	S. L. Baysinger	Rolla
Pike	M. O. Biggs	Bowling Green	T. Guy Hetherlin	Louisiana.
Platte	C. H. Chastain	Weston	G. C. Coffey	Platte City.
Pulaski	W. L. Ragan	Richland	G. W. Orrick	Crocker.
Putnam	C. H. Carryer	Hartford	T. A. Townsend	Unionville.
Ralls	W. S. Harwood	Rensselaer	T. J. Downing	New London.
Randolph	G. O. Cuppaidge	Moberly	W. M. Dickerson	Renick.
Ray	L. D. Greene	Richmond	E. F. Higdon	Richmond.
Reynolds	J. M. Lowrey	Centerville	T. W. Chilton	Corridon.
Ripley	S. A. Proctor	Doniphan	J. F. Redwine	Doniphan.
Saline	D. C. Gore	Marshall	D. F. Bell	Marshall.
St. Charles	J. R. Mudd	St. Charles	B. K. Stumberg	St. Charles.
St. Clair	W. Cline	Appleton City	D. B. Williams	Osceola.
St. Francois	J. L. Haw	Farmington	A. L. Evans	Bonne Terre.
Ste. Genevieve	C. Moore	St. Marys	R. W. Lanning	St. Genevieve
St. Louis	Geo. Homan	Odd Fellows Building	Hart Godloe	Vanol Building.
St. Louis Co.	Howard Carter	Webster Groves	R. D. Moore	Central.
Schuyler	J. T. Jones	Queen City	H. E. Gerwig	Downing.
Scotland	A. L. Davis	Arbela	O. F. Pile	Memphis.
Scott	T. F. Frazier	Commerce	C. P. Haw	Benton.
Shelby	L. W. Dallis	Hunnewell	A. M. Wood	Lentner.
Stoddard	D. R. Corbin	Bloomfield	John Ashley	Bloomfield.
Sullivan	J. C. Kessinger	Milan	J. S. Montgomery	Milan.
Vernon	E. A. Dulin	Nevada	T. B. Todd	Richards.
Warren	W. J. Alexander	Marthasville	E. A. Fluesmeier	Wright City.
Washington	J. A. Eaton	Belgrade	W. S. Smith	Belgrade.
Wayne	J. P. Sebastain	Patterson	R. J. Owens	Mill Spring.
Worth	O. H. P. Mills	Grant City	J. K. Phipps	Grant City.